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15	£1 10 6	£1 14 8
20	1 13 6	1 17 9
25	1 17 6	2 2 0
30	2 2 8	2 7 5
35	2 9 2	2 14 3
40	2 17 5	3 2 10
45	3 7 11	3 13 11
50	4 2 6	4 9 3
55	5 1 2	5 9 11
60	6 8 3	6 17 4
65	8 2 3	8 14 6
70	10 11 9	11 5 6

To Insure 100*l. Payable on the attainment of a given Age, or at Death, whichever happen first.*

Age next Birth Day.	50 Without Profits.	50 With Profits.	55 Without Profits.	55 With Profits.	60 Without Profits.	60 With Profits.
21	£3 2 5	£3 7 10	£3 12 11	£3 17 6	£3 6 3	£3 10 3
25	3 15 0	4 1 6	3 2 2	3 7 6	2 13 3	2 17 10
30	4 17 11	5 6 5	3 17 4	4 4 0	3 4 5	3 10 0
35	6 15 2	7 6 11	4 19 10	5 8 6	3 19 7	4 6 5
40			6 17 9	7 9 8	5 2 7	5 11 6
45					6 19 7	7 11 8

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Age	20	1*l.* 11*s.* 8*d.*	30	2*l.* 2*s.* 2*d.*	40	2*l.* 17*s.* 0*d.*	50	4*l.* 0*s.* 8*d.*

WITH PROFITS.

Age	20	1*l.* 16*s.* 11*d.*	30	2*l.* 9*s.* 2*d.*	40	3*l.* 6*s.* 6*d.*	50	4*l.* 14*s.* 2*d.*

A division of the profits will take place quinquennially. Bonuses accrue after three annual premiums shall have been paid; and parties can receive their bonuses in a present sum, or have them applied in augmentation of their Policies, or in reduction of their future Premiums. Assurers may contract to pay their Premiums either in one sum, in a given number of payments, in annual, half-yearly, or quarterly payments, or on the ascending or descending scale. Officers in the Army and Navy on active service, persons afflicted with chronic and other diseases, and such as are going beyond the limits of Europe, are also Assured at moderate Rates. Policy holders have a right to attend the General Meetings, at which the Auditors report annually the state of the Company's affairs. Prospectuses and all necessary information may be obtained at the Office.
MICHAEL SAWARD, Secretary.

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Sum Assured,	Time Assured.	Sum added to Policy
£1000	6 Years, 10 Months	£136 13 4
1000	6 Years	120 0 0
1000	5 Years	100 0 0
1000	4 Years	80 0 0
1000	3 Years	60 0 0
1000	2 Years	40 0 0
1000	1 Year	20 0 0

This Company holds out in various other respects great inducements to the public. When such facilities are afforded, it is clearly a moral duty in every parent who is not possessed of a fortune, but of an income, however moderate, to insure his life for a sum which may yield a comfortable provision for his family.

RATES OF PREMIUM.

Age 25	Without Profits,	£1 18 5	With Profits,	£2	2 11	per cent.
.. 30	.. ..	2 3 10	.. ..	2	8 2	do.
.. 40	.. ..	2 19 1	.. ..	3	3 4	do.
.. 50	.. ..	4 9 8	.. ..	4	14 0	do.
.. 60	.. ..	6 15 3	.. ..	6	17 9	do.

Insurances may be effected on lives however far advanced, and the half credit for five years is found particularly convenient on such insurances. Annuities are granted on very liberal terms.
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12	1 9 3	1 7 0	50	4 1 9	3 13 3
16	1 11 3	1 8 10	53	4 11 6	4 2 6
20	1 14 0	1 11 6	56	5 4 0	4 14 0
23	1 17 0	1 13 8	60	6 6 0	5 12 6
26	2 0 3	1 16 2	63	7 4 0	6 9 6
*30	2 5 0	1 19 9	66	8 4 0	7 10 8
33	2 8 6	2 2 10	70	10 6 4	9 7 6
36	2 13 0	2 6 4	73	11 16 2	11 2 6
40	2 19 9	2 12 0	76		13 1 9
43	3 5 3	2 17 2	80		15 12 10

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LONDON, SATURDAY, AUGUST 14, 1841.

MEMOIRS OF MADAME LAFFARGE, WRITTEN BY HERSELF.

[THE requisites for a French heroine are a certain quantum of beauty, but an infinitely greater portion of *esprit*. The great interest of Madame Laffarge with the French, consisted in her being a heroine ready made. We doubt much whether this Autobiography will tend to keep up the illusion of her being a heroine and a *femme d'esprit*. We find in it less of the latter quality than we should have expected. There are, however, ample traces of her early courage, her *espiéglerie*, and of her being at once a spoiled child and a neglected one. As we have obtained, exclusively, through our Paris correspondent, a portion of her forthcoming Memoirs, we shall proceed at once to translation, without pausing to inquire what is the real value which attaches, or which only can attach, to the revelation of such a person—about whom, however, there has been so much excitement as to justify us in making this effort to gratify public curiosity.]

I was born on my father's *fête* day, in 1816, I believe. He desired a son, but consoled himself in regarding my mother, and imprinting a kiss on the forehead of his little Marie. A first child, the joy and pride of two generations, ought to have been lovely as an angel. But alas! I was ugly enough to frighten away even maternal illusions, nor could all the coquetterie of infant dress correct the original defect. My baptism was to be the preface of a marriage betwixt M. Brack and the rich Mdlle. Destiller, who soon forgot me with her young girl's thoughts,—the misplaced name of Fortunée being all that I derived from my godmother. My earliest recollections are the large trees of Villers-Hellon, the small carriage that rolled me round the park, and a plum-tree under which I broke my arm, whilst my good Ursula was sharing a plum with a handsome gamekeeper. I recollect, too, my grandmother's red shawl, my little finger plucking the *pompon* from my father's military hat, and my grandfather's singing the *Magnificat* of the shoemaker of Montpellier. Later my father became Lieutenant-Colonel at La Fere, and there my recollections are enriched by the Sunday parade and the cannon of the Polygone. My maid and mother did not understand the poetry of the artillery exercise, and kept me from it. But I watched my father as he put on his sword, clung to his neck, and gained my point of being allowed to follow him. At the review I soon passed from the arms of Ursula into those of the artillery men, who made me fire the guns, laughed at my courage, and showed their attachment for their colonel by spoiling his daughter, and calling me *la petite artilleuse*. Summer brought us back to Villers-Hellon, and to its merino flocks, where my delight was to scale the back of a large sheep, whilst he kicked and shook, and at length rolled over with me, to my own delight, and the alarm of others. I was indulged in everything: in new-laid eggs for my breakfast, pet chickens that ate at my feet, ducklings that swam for me in a little pond, flowers that I might throw to fade, and fruits to perish. My health was so delicate that the order ran, that no one should make me cry. So that I became the happiest of spoiled children, with a good heart and a very bad temper. When I was five years old, my mother gave me a little sister, Antonine, whom I found anything but pretty, and said so. Nor did I welcome with cordiality her coming to share with me the care and attention of every one in the house. My aunt, Garat, was confined at the same time of a daughter, and the ceremony of baptism is impressed on my memory, as I acted godmother, and fell into disgrace for not knowing my part.

A year after I lost my grandmother. She was the daughter of an Englishman, Colonel Campton. She was nine years old, and in mourning for her father, when she was deprived of her mother also. Madame de Genlis, then travelling in England, became the provider of the little orphan, and carried her off to France, where she shared the lessons of her royal pupil, Madame d'Orleans. The Revolution broke out. Madame de Valence, daughter of Madame de Genlis, took the young Herminie, and added the boon of intimate affection to that already bestowed, of a good education. My grandfather used to relate, in the following manner, the story of his marriage.

Mdlle. Herminie Campton was at eighteen beautiful,—small, yet graceful, with hair darker than the raven's plumage, with soft eyes, a *nonchalante* mouth, and a turned-up nose. M. Collard, the friend of General Valence, was desperately in love with her. My grandfather, one of ten brothers, had arrived from Gascony, and been put by M. de Talleyrand on the road to fortune. He was handsome, elegant, and was accepted by Herminie as a husband. Immediately after the honeymoon my grandfather was arrested, as a Girondin, and only liberated at the fall of Robespierre. An army contractor under the Republic, he augmented his fortune considerably under the Directory, thanks to Prince Talleyrand, who became the godfather of his son, the Princess Borghese being godmother. This charming sister of Napoleon was then styled Madame Leclerc, and inhabited the chateau of Mont Gobert, near that of Villers-Hellon, just bought by my grandfather. The christening was to be a sumptuous ceremony. The Prince of Beneventum, to show his taste and *faste*, had ordered from Paris the most beautiful *corbeille*, with the richest ribands, flowers, and *bons-bons*. The boxes arrived, and were opened with the greatest expectation, when lo! nothing was found within but faded ribands of a year old, scarfs that had lost all colour, gloves four times too large, paper flowers, and plaster *bons-bons*. Madame de Talleyrand, in a fit of jealousy, had replaced the rich contents of the *corbeille* by all the trumpery she could collect. The despair of the princely godfather could not calm the disappointment of the pretty godmother; and my uncle's christening took place in an atmosphere of ill-humour.

My grandfather seldom quitted Villers-Hellon, except during the Sessions of the Legislative Body. He was what is called a furious *proprietaire*, planting gardens and orchards, constructing roads and warrens. From Chantilly he caught the *moutonomanie;* and shepherds and sheep of the finest races became his all-absorbing thought. My grandmother, who cared little for sheep, spent her spring in regretting Paris, and her autumn in the expectation of a speedy return to it. She married her three daughters early.

My mother, the eldest, was of that calm beauty which pleases the heart, more than the eye, full of amenity and grace, of solid and attaching qualities. She was her father's favourite, and married, in 1815, M. Cappelle, a captain of artillery. Herminie, the second daughter, married the Baron de Martens, a Prussian diplomatist. Louise, the youngest, gay and soft as a moss-rose, quitted her dolls at fifteen to marry the son of M. Garat, Director of the Bank of France. My uncle Maurice must not be forgotten. He passed his years at college, and his vacations only at Villers-Hellon. His parents had long discussions as to what was best to be done with him. But they ended by no decision, and he by living to do nothing. After my grandmother's death, my grandfather intrusted all household cares to his daughters, who spent all their summers at Villers-Hellon. In winter my mother and I returned to join my father, who was Director at Mezières.

Two years passed thus between Villers-Hellon and Mezières. My grandfather came to see us the last year, accompanied by my aunt De Martens and her daughters. Herminie was fair and fresh-coloured; comparison with her was little flattery to me; for this reason, I found her pedantic and tiresome. Antonine, on the contrary, admired her, so much as to give up our French plays for her German ones; they were intimate friends, and I was wicked enough to be their spoil-sport. Bertha had still her nurse, and only cried and slept. I recollect one day, that an officer, Mons. P——, was in ecstasies with my pretty cousins; my aunt, with proud modesty, disavowed his exaggerated compliments. "Ah! Madame," said he, "why may not you be proud, when even the owl finds its young ones beautiful?" The delicate compliment was long remembered, and Mons. P—— became the owl of our society. The following summer, at the time of the coronation of Charles the Tenth, I saw Prince Talleyrand for the first time. My grandfather received him with pleasure at Villers-Hellon. The court, the gardens were illuminated, and after dinner the magnificent flocks of sheep of the three farms passed in review before the drawing-room windows. This agricultural review seemed to amuse the great diplomatist; he found it very original, and readily accepted for Vallency two of the finest rams. Talleyrand was so often spoken of, that I looked at him particularly, and recollect him perfectly; his forehead was noble, he was most amiable; but, unfortunately, this amiability was said to proceed from his will, not from his heart. I recollect that the day after his arrival, I said to my grandfather, "That even his limp had something intellectual in it." This earned me a kiss and compliments, with which my childish vanity ought to have been satisfied. Almost every autumn Mad. Elmore, daughter of the famous Seguin, contractor for the armies of Spain, quitted England to come and spend some months at Villers-Hellon. M. Seguin had been intimately acquainted with my grandfather; they inhabited for a long time two hotels in the Rue de Provence, separated by a garden, in which the children played together, and laid the foundation of friendships which only end with life. At this time—that is, towards the end of the Directory,—M. Seguin was immensely rich, and began to show his madness by giving to his children first-rate masters, to develope their musical talents. Mdlle. Zoë made *gammes* on opening her eyes; left the professor of harmony for one of accompaniment; when her fingers were fatigued by a sonata, she screamed out one of Glück's or Mozart's finest airs; and terminated her harmonious martyrdom by going to the Opera, not to listen, but to write down the most difficult passages of the piece. As to the heart and mind of the two poor little children (I say two, because Abel scraped his violin, whilst his sister thumped the piano), Madame Seguin was obliged to steal from their sleep a few moments, to instil into them a little religion, history, and geography,—to make them write two lines, and spell three words. I am unjust, however: M. Seguin's paternal solicitude gave them, three times a week, besides their music lessons, a professor of legerdemain, one for *rebuses* and patience; they learned also to blow glass, and a little chemistry. As a recompense for their progress, their father gave them children's balls. After supper, when obedience was not so much thought of, a drawing-room was thrown open, in which there was an immense *Mère Gigogne*, under the petticoats of which might be discovered treasures of dolls, swords, balloons, and *bons-bons*. "Come, take; they are all for you!" cried the master of the house: then the children ran, upsetting each other, fighting and scratching; there were screams and tears, and M. Seguin, rubbing his hands, was delighted at the fears of the parents, the blows of the poor little children, and all this childish and noisy anarchy. Mdlle. Seguin's fine fortune attracted numbers of adorers—M. de Noailles amongst the number: the bargain was not made, the nobleman requiring more money than the father would give. The mania for horses, then prevalent, overcame all M. Seguin's other manias; he became acquainted with M. Elmore, whose stables in London were filled with the best race-horses. M. Elmore was not in society, had little fortune, but the most cunning jockey could not deceive him in the age or quality of a horse. He was invaluable for a person wishing to furnish a stable—a formidable enemy to roguish horse-dealers—and M. Seguin made him his son-in-law from economy. Physically, M. Elmore had a glass eye, red hair, and could not speak two words of French; but he was a heretic, and promised to become a convert. Mdlle. Zoë accepted him, to gain at the same time heaven and a husband. Madame Elmore, although not very pretty, was admired: one forgot the charms she did not possess, when she smiled; her eyes were bright, her figure supple and graceful, her foot small, her wit smart: she was, besides, very coquettish, and very pious. Her husband, who had none of those qualities, possessed, nevertheless, a great deal of goodness; he spoke very bad French, spent his days in hunting, and his evenings between sleep and my society. My childhood was so often rocked by the originalities of M. Seguin, related by one of my old servants, to set me asleep, that I cannot pass them over in silence, in speaking of the lively impressions of that time. M. Seguin was a very poor chemist, when he discovered the way to tan leather in a very short time, and, I think, by employing oak-bark. His fortune was secured if his invention succeeded,—if not, the guillotine awaited him. He confided in his star, and fortune became his slave. M. Seguin then married a noble but poor girl, opened his house to all that Paris possessed of the amiable and elegant, and was remarked for his

sumptuous extravagance. His balls were admirable —his dinners inimitable. His first room—a simple dining-room, received the guests round a table loaded with oysters, soups, and fish; on a signal being given, they passed into another room, where the finest silver contained the most exquisite dishes; at last the dessert was eaten in a delicious drawing-room, perfumed by the rarest flowers, lighted up by a thousand wax lights, glistening with crystal, silver gilt, and united the most delicate refinement of luxury. M. de Talleyrand desired one day to witness this original magnificence, and asked my grandfather to take him to dine at his friend's: he announced it to M. Seguin, who promised that the reception would surpass even the former ones. M. de Talleyrand and my grandfather, when they arrived at their host's house, were ushered into a study. M. Seguin was full of excuses: his wife was absent; he could only give them a bachelor's dinner; he claimed their indulgence. This appeared to be mere fishing for compliments on the part of the celebrated Amphytrion; but nothing renders one so indulgent as the perspective of a good dinner. Six o'clock struck at length; a servant man came in, put a napkin on the bureau, placed three plates and three chairs. M. Seguin then went into a neighbouring room, and came back bringing a patent *pot-au-feu*. He put bread in the soup, explaining gravely the advantage of the new invention. Beef was brought in, with a large piece of cheese, and this composed the dinner. My grandfather was indignant; M. de Talleyrand fasted like a man of sense, but not without rancour.

M. Seguin had a splendid estate near Paris, at which he also gave *fêtes*. One day he announced prizes, games, dances for the villagers of the environs; there was to be, above all, a race in sacks, which was to excite the laughter of his friends, as well as the ambition of the peasants, who were eager to get the prize. The day before the *fête* he caused to be dug a pit, twelve feet deep, where the runners were to pass; he covered it with branches and gravel, and the unfortunate runners in sacks all fell in, with broken arms and fractured skulls. About the same period, having fallen out with the Princess de Chimay, who inhabited an hotel adjoining his in the Rue de Varennes, M. Seguin got erected in his garden a mountain of uncultivated earth, which deprived his unfortunate neighbour so completely of light and sun, that she was obliged to give up her abode. After the marriage of his daughter, M. Seguin took a great dislike to the world: he forbade his wife's ever receiving friendly visits; and, to sequester her more surely, he got all the staircases taken away, forcing her to ascend to the apartments by a ladder. Madame Seguin was at last obliged to go to her daughter in England, and her husband, no longer having wherewithal to divert himself, shut himself up in a small garret of his palace, where he lived with his fiddles, his *pots-au-feu*, his folly, and his portress.

M. Seguin having sent away all his servants, his magnificent horses were reduced to wander at liberty in his garden, living on dry leaves. Some time before his death, he decided on selling them; a horse-dealer was called in, but disputed about the price; M. Seguin finished the difference by blowing out the brains of those noble animals.

We came to Paris to spend the winter, and my father went to Valence, where his regiment was. His absence made me feel very lonely; shut up in one of those small Paris apartments, condemned to study grammar, history, and geography, only going occasionally to the Tuileries, and never with liberty of action or movement, I became sad, *ennuied*, and *ennuyeuse*. I could not move without knocking down something, and without the noise reaching my mother. If I sang, if I danced, I shook the whole house: every minute the entrance of a visitor sent me out of the drawing-room; then a music-master overpowered me with flats and sharps, and did not allow me to play the smallest air to the injury of scales and exercises.

Marshal Macdonald, who was at the head of the *Maison Royale* of St. Denis, and who had known my grandfather very well, advised my mother to break my indomitable spirit under the yoke of a school: my admission was obtained for St. Denis, and I was conducted there in the month of March. My mother, who dreaded my despair, did not tell me her intention. But one morning she made me get into the carriage, and we drove to St. Denis. The large door of the convent closed upon us, and we were received by Madame de Bourgouin, the superintendent, who kissed my forehead, told me that she had a daughter the more, and that I was destined to remain. During a quarter of an hour my mother enumerated my faults, predicted my cries and despair, and declared that she would run away to avoid adieus. Leaning against a window, immoveable and depressed, I heard all, and resolved to hide the tears which stifled my heart. A lady of the house came, took me by the hand, and clothed me with a long black gown and a cap, a bag which was always to hang on my arm, coarse black stockings, and frightfully large shoes. When my mother saw me thus accoutred, she began to cry. At length she took her departure, and I threw myself on the little bed which was to be mine, bit the sheets to stifle my cries, shut my eyes not to see that frightful clothing, so unlike my light little frocks of the day before. I found at St. Denis the daughter of General Daumesnil, an old friend of my infancy, but even she could not console me at first. Mdlle. Vallin, a beautiful young girl, niece of my aunt Garat, Mdlle. Fleurot, second mistress, whom I had seen in my family, also tried, but in vain, to make me smile. My first day at school was such a striking contrast with my life of independence and liberty, that it remains printed on my mind in painful characters. I was still asleep, when the bell awoke our large dormitory of 200 girls. My eyes opened quite astonished, and I felt the first painful feeling with my first thought. Marie kissed me; her bed touched mine. She was to be my Cicerone, and she had been charged to accustom me to my new life. After having combed their hair, the pupils went in, twenty by twenty, to a dressing-room furnished with a large copper basin and cocks. The water was freezing; they all had just risen from a very hot bed: most of them did not even wet their little finger, and when they saw me quite blue under this cold water, they laughed at my simplicity. Putting on our melancholy frocks, we went to mass and prayers. It was not a few words addressed to the Divine Being for protection for one's self, and health for others—it was a long prayer read out of a book: the Pope, the King, bishops, deacons, and archdeacons, were all prayed for, whilst the little girls finished their interrupted sleep, and the big ones got their lessons in the midst of the service. Then came a bad soup in the refectory, with a few moments of what was called recreation in the cloisters.

It was necessary to learn these lessons, but friends formed groups, and chatted, and laughed, instead of learning. They all stared at me with the silly curiosity of school girls; Marie introduced me to many of the pupils, and from the first moment I entered into the party of the most exalted Napoleonists. At the hour of lessons I was interrogated. Having studied almost alone, I had run over my books, and knew a little of everything without knowing anything perfectly: they were embarrassed to class me; at length I obtained permission to be with Marie, on condition that I should pass the other classes. I had a facility which rendered this task very easy. As, instead of taking advantage of the permission given me of doing nothing this first day, I only wept, they proposed that I should go and play the piano to amuse me. I thought I should have become deaf on going into this room, where there were fifty pianos all playing at the same time, and making an infernal harmony of gammuts, sonatas, valses, exercises, romances, cadences, in short, every sort of music jumbled up together. I sat down to a piano, but the keys remained mute, and were only watered by my tears. The dinner bell rang at two o'clock, and after dinner there was a long recreation in the garden. Marie, tired with my incurable sadness, abandoned me to myself, and I began to reflect on my slavery, to weep for my father, for Antonine, my mother, my good Ursula. A pupil passing me, said, "What a stupid *pleurnicheuse*." This word awakened me; I dried my tears, and asked her if she also had not wept on leaving her father. "If you are not pleased with what I say, go and inform," said she, laughing.—"Inform! yes, that you are wicked and silly—this will not be news for those who know you." The pupil was a hypocritical and detested royalist; my answer was found haughty, but just; so I gained one enemy and ten friends. At eight, supper, another long prayer, and then to bed. There was a little Imperialist Committee on one of the beds of the dormitory: I was admitted; I caught a cold and a punishment for next day. Some time was necessary to comprehend my new existence, and I never could have become accustomed to it. I did not know how to walk with a long frock; twenty times a day I forgot that it was not decorous to open or shut a door without curtesying; I forgot....that a bag was an appendage that no modest young woman should be without; in short, I was often so giddy as to go down to the refectory without burying my head in an immense bonnet! If I add to all this, that I did not know how to speak low, that I laughed without hiding my face in my paper, and that I constantly deranged the symmetry of the benches of my class, it will be understood that the punishment of wearing my bonnet on the wrong side was constantly inflicted on me.

As much as the slavery of our acts and gestures was insupportable, so much the liberty of our thoughts was immense; our mistresses never conversed with us; we interchanged among ourselves the falsest ideas. Our dress was the guarantee of our moral perfection, as our bags and bonnets were those of our virtue. If my recollection of ten years since does not fail me, I think the studious part was better understood; the pupils were well grounded, and as it was useless to be little prodigies, a young girl on leaving St. Denis, having passed all her classes, was sufficiently educated. They were sensible enough to forbid the plurality of accomplishments, being of opinion that music and drawing cannot go together; love of the arts, when divided, becomes mediocrity. Education ought to have a moral tendency, and it is not by overloading the brain with a thousand superficial things that the mind is improved. Making children recite history, like parrots, tell you that Clodian had a fine head of hair, that Pepin was a usurper, that one of the Philips of Valois was handsome and the other courageous, is a vocabulary as fatiguing as it is useless. History, thoroughly studied, is philosophical, it shows us kingdoms as the great theatres of our passions, and by discovering events discovers also the men which are the movers of them. It is the same with music; the science of quadrilles and airs can awaken the echo of dancing in a young head, but the sublime symphonies of Beethoven, the divine thoughts of Mozart, go to the heart, enlarge and elevate it by the sentiment of human perfection, towards that great divine perfection which is God.

But I have wandered far from my youth, forgetting myself in my present old age: let me call back my recollections of the past, and become once more a child under the great cloisters of our ancient abbey. As long as my mother remained in Paris, I saw her every Sunday: these interviews were painful. She never came alone to Mad. de Bourgouin; I was too proud to weep in her arms, and I always recollected that she was the cause of my exile from all I loved. One can suffer, either from events, or from those who are indifferent to one, without complaining; but to suffer by those that one loves is a continual torture. I was no doubt unjust; my mother thought that my character would adapt itself to the slaveries of social life by this severe and monastic discipline; alas! my mind revolted instead of submitting, and under the yoke I better understood the value of liberty. My hours for learning passed rapidly; study was a pleasure rather than a pain to me. I was ambitious of occupying the first places in the classes. But scarcely had the hour for recreation arrived, than I shook my chains and sometimes burst them. St. Denis was divided into two hostile camps: most of the pupils were daughters of old imperialists, adoring the idol of their father; others, daughters of emigrants, were outrageous royalists, and called our god a usurper. The chiefs of either party laid hold of the new comers, taught them the songs of Beranger, or the hymns on the birth of the Duke of Bordeaux. All the little ones were in the service of the elder girls, they carried letters, bore the punishments, and as a recompence received a bit of tri-coloured ribband, an eagle, or best of all, the portrait of the little King of Rome, according as the service was great or small. Each of the elder pupils had one or more adopted daughters, kinds of slaves who sold themselves for a small degree of protection. I would not submit to this necessity. I served according as it suited my

humour, and when I was sad I went and sat under the shade of a large tree, which reminded me of one of the limes of Villers-Hellon. If I was unreasonable, Marie Daumesnil shared my silly pranks and the consequent punishment. We had everything in common; our mothers had permission to call together and see us, and the same summons answered for us both. At night, when all were asleep, we spoke of those absent, of the coming vacation, of her brother, of my sister, and Marie at last could not go to sleep without my hand in hers. When Marshal Macdonald came to visit the establishment, I was brought to him. He asked me two or three questions without listening to the answers, and sent me away with a little tap on the cheek. Mad. de Bourgouin was very kind to me; she was an excellent woman, looking dignified with the *grand cordon* of the Legion of Honour, and not troubling herself much with the duties of her administration. She lost, whilst I was at St. Denis, a daughter-in-law whom she adored, and all her faculties became paralyzed with grief. I recollect what pleased me most in these visits to the superintendent, was my being able to go down the great staircase alone, to cross the cloisters which led to our apartments, without being in rank. I went also sometimes to Mdlle. Fleurot, who was a novice, and very good to me; she was an amiable person, without fortune, who was to have remained as mistress in the house, but who left it afterwards to become a governess.

Towards the end of January I had an inflammation of the stomach, and my good Aunt Paul replaced my mother by her attentions and many visits to me; she obtained for me a month's leave, which I spent with her, blessing my stomach for becoming so conveniently inflamed. I had all sorts of pleasure. M. de Brack took me out sometimes for the whole day. Oh! how my heart beat when I jumped into his light tilbury. He took me to pay some visit, gave me a dinner at the Café Anglais, then took me to the theatre. On going home at night I was laden with *bons-bons*, toys, and souvenirs. I still recollect two of those visits—the first was to M. Cuvier; we were shown into a study where the great *savant* was half asleep in an arm-chair, whilst a young and beautiful person, who was his daughter, read a manuscript to him. I acknowledge, to my shame, that at the end of a quarter of an hour I yawned, and Mdlle. Cuvier was obliged to awaken me, to make me admire all the pretty little animals of her beautiful garden. The second visit was to Mdlle. Mars: I had heard so much of her that I was full of admiration, on entering her elegant hotel, situated, I think, Rue du Mont Blanc. Her dress was a large white morning wrapper, her face in nowise striking. M. de Brack told her of my curiosity; she smiled, kissed me, and gave me some candied chesnuts. Disappointed at not seeing anything very wonderful, I determined to listen. She began to speak with the most delightful voice in the world, of land-speculations, rents, and of the variations of the Exchange. I did not understand, but I listened to those sounds as to enchanting music, and it seems to me at present that I experienced the same mingled sensation of pleasure and pain that one feels on hearing the beautiful airs which, sung by Grisi, make one weep, played as quadrilles. During this month of convalescence I was taken to the Opera, and to the Porte St. Martin, where the '*Petites Danaides*' seemed to me the most amusing thing in the world: but that which struck me more than everything else, and made me quite proud and happy, was a children's ball at the Palais Royal. When a tall lacquey brought me the princely invitation, when M. de Brack, who was at my aunt's, declared he would give me a dress from Victorine's, I understood the delight of Cinderella, and did not envy her her godmother, who was less perfect than my godfather. At last the day of the ball arrived. I was obliged at first to support the torture of fifty *papillottes*, which were to make my hair curl naturally; then they put me on a beautiful *crêpe* frock—I was a little pinched in it, but took courage on looking at myself in the glass. Finally, my shoes, which fitted beautifully, added to all that I already suffered to look fine. We arrived as the Duchess of Berry opened the ball with a quadrille; she wore a dress of white *crêpe*, ornamented with pink and white feathers, a garland of the same feathers in her hair:—her dress was prettier than her face. I saw also all the graceful Princesses of Orleans; Mademoiselle, the tall Mademoiselle, who appeared to me to be a pedantic princess; and I danced a gallopade with the Duke of Nemours. Monseigneur was never in time; he trod on my toes, dragged himself along, and I was as much fatigued as flattered by this signal honour. I was brought back to St. Denis, my head so full of all my pleasures, and my imagination so strongly excited, that at the end of three weeks of lamentations and dreams I fell dangerously ill of a brain fever, augmented by an inflammation of the lungs. They wrote to my father that there was no hope, and when my mother arrived, in post haste, I was senseless, and given over. In my delirium I called her; told her that absence was killing me, that she was the cause of my death, and the forgetfulness of my father. This lasted fifteen days; my mother was so struck that she decided on taking me from St. Denis, and the first word which reached my ear when I became sensible was a promise to restore me to my life of affection and of liberty.

[Having given our Heroine's account of her early life, we may at once proceed to a subsequent period, as of more present interest. The story of the robbery of the jewels, so fatal to her, is well known. The Court of Tulle has just decided that she was guilty. The following is the way in which she ingeniously explains the affair.]

Madame de Leautaud had formed a project, counselled, or at least approved of, by M. Delvaux. This she confided to me, and caused me no little fright. Mad. de Leautaud had been presented with diamonds on her marriage. She wished to sell them, and with the proceeds ameliorate the condition of M. Clavé, get him to quit home, to give back her letters, and render any indiscretion on his part impossible for the future. I thought the plan inexecutable and dangerous. And however M. Clavé might be wanting in delicacy and honour, however he might, when piqued by neglect, have menaced to take vengeance on Mad. de Leautaud, I could not think him vile enough to say to a woman, whom he had loved and whom he had in his power, "Purchase my silence, or I will reveal what will dishonour you." Mad. de Leautaud, however, persisted in her plan; and the marriage, which took place in the château, was chosen as the fittest opportunity for making away with the diamonds.

After breakfast we turned the conversation on diamonds, and the difference of jewellers' setting, and this enabled her to call for her casket of jewels. Soon after the company quitted the salon. Mad. Nicolaï went into the garden, M. Nicolaï and M. Leautaud to Pontoise on business. The maid servants went to vespers, the men servants were busy either in preparations for the morrow's departure, or had been sent to the town. All was disorder and isolation in the château. Mad. Leautaud placed her casket on the work-table near the window, which opened on the court, where beggars used frequently to come and receive their pittance of coin. She, at the same time, took the ornaments and jewels out of the casket and brought them up to her chamber, as if they had been really stolen, and then we went out to walk. We were absent three hours. On re-entering we found nobody in the salon; Mad. de Leautaud openly took her casket, and brought it up stairs. No one had been in the house; Mad. de Nicolaï said she had not returned to the salon, and M. Alfred de Gory had rapped at every door without being able to gain admittance. Not to leave any means of justification unemployed, Mad. de Leautaud left the key in the drawer of her diamonds during all the fêtes and bustle of the marriage of Osny.

The casket had been replaced in the bottom of the drawer, and under the pretext of writing a few lines, Marie, contrary to her habit, went up into her room again in the middle of the day, begging M. de Leautaud and me to come and continue our *far-niente* on her excellent sofas. We were soon able to turn the conversation upon the beautiful jewels of Bourguignon, and pretended that those false jewels were perfect imitations, and that at a certain distance they could not be distinguished; and I named several ladies who having beautiful diamonds, put them on with false ones, which thus passed unnoticed. Marie maintained the contrary. We begged M. Leautaud to decide the dispute, and I offered to show, as a point of comparison, some buttons, which served to fasten my prayer-book. I brought the buttons; Marie opened her drawer, took out the casket, and appeared quite in dismay at finding it empty. We looked—we asked—we called the chambermaid, who said, she had not seen them since the day that they had been left in the drawing-room by Madame de Leautaud. Marie then remembered that she had left them on her work-table, and that, by an incredible forgetfulness, she had left them there during several hours. She remembered perfectly having brought up the casket, but she also remembered that, being in a hurry, she had shut it without being sure that the diamonds were in it. No doubt remained upon the subject. The diamonds had been taken by a beggar or a stroller. Our recollections all strengthened this way of accounting for their disappearance. We were absent during several hours; we had pushed the table near the window to waltz after breakfast; all the servants were out; the casket could be seen from without, and could be taken by stretching out the arm; in our walk we had met some unknown and frightful persons, &c. M. de Leautaud, furious at the negligence of his wife, reproached her bitterly. He ransacked the drawers, overwhelmed us with questions, searched all the work-baskets in the drawing-room, whilst Marie and I remained silent and dismayed; we were still more so on finding that M. de Nicolaï had sent for two gendarmes to search all the servants' rooms in the house. The evening passed in conjectures and recriminations. M. de Nicolaï alone retained his self-possession. As to M. Leautaud, he stunned us with his regrets, reproaches, suspicions, and accusations; so much so, that hearing M. Alfred de Gory had been some time alone in the house, he persuaded himself very seriously, that he had taken the diamonds to give them to one of his mistresses; and it was with difficulty he could be persuaded to abandon the idea. The night following was, to me, a fearful one. I was horribly alarmed at the consequence of our imprudence. I told Marie, that no human power would make me keep the diamonds (which she had put into my room some days before) during the search. Unfortunately, it was impossible to convince her. The danger of the present seemed to frighten her less than the danger to come. Her anxiety was as great as mine; but she could not think of any natural way of refinding the diamonds, and thought that having gone so far, the least hesitation would be an irreparable imprudence. Marie's words failed to calm me, but her prayers and tears took from me the courage of abandoning her to herself. What could we do with those unfortunate diamonds? It was impossible to hide them in Marie's room; her *femme de chambre* upset everything twenty times in an hour. M. de Leautaud seemed to make it the centre of his researches—of his despair, and loquacious indignation against his wife. There was not a spot, not a little corner, escaped his scrutiny; and, notwithstanding the anguish of my poor friend, I acknowledge I had not the courage to keep her dangerous deposit. Suddenly, whilst we were lost in this labyrinth of difficulties, dangers, and despair, the great swords of the gendarmes sounded on the marble of the hall, and it was necessary to come to some decision. We were in the room; the diamonds were there: we had scarcely time to hide them in a pair of long gloves, which we slipped between the cushions of an arm-chair. Marie sat down on this chair, and, with death in our hearts, but smiles on our lips, we awaited the end of this domiciliary visit. The gendarmes made their examination. What suffering during those moments! Every step seemed directed towards us, each word to interrogate us, every look to penetrate us. We both sat at the door of my room, apparently taking an interest in what was passing: our terror was extreme, and lasted during the minute examination of the gendarmes. Alas! how weak are we when our conscience accuses us! Our tribulation did not cease with the departure of those terrible agents of justice; it was necessary to come to some new determination. It was impossible to hide the diamonds with their setting. Lulo, who was my cashier and confidante, kept all my keys; and without scruple, and with the impunity of an old servant, discovered all my secrets, read the letters which I did not give her to read, and, in short, found out herself whatever I did not confide to her. Marie knew this;—I would not have a new confidante. At length she decided on breaking up the setting of the jewels. We set to work in my room with penknives and scissors. The work was

difficult, and we most awkward. We cut our fingers, and had to bear it without complaining or losing courage: nevertheless, afterwards we took the precaution of treading on the larger diamonds, in order to loosen them, and so the task became less difficult. While thus engaged, we spoke of M. Delvaux, marriage, *corbeilles*, and *fêtes:* for Marie, who saw me uneasy, frightened at the least noise, wanted to distract my attention, and perhaps shake off her own thoughts. Whilst unsetting a large pearl, I remarked that it appeared to be the younger sister of another pearl we had admired on a blue enamel ring belonging to the Countess de Courval. "It is ill-shaped, which takes from its value, and will, perhaps, prevent its being set to advantage," said Madame Leautaud, "I wish you would accept it as a present from me." I resisted; but at last she used so many arguments, calling it a wedding present, that, at length, I did accept the pearl.——

[We must here break off for the present.]

REVIEWS

Memorials of the Order of the Garter from its foundation to the present time, with Biographical Notices of the Knights in the reigns of Edward III. and Richard II. By G. F. Beltz, K.H., Lancaster Herald. Ridgway.

Among the institutions of England, and indeed of Europe, the Order of the Garter, from its antiquity, its renown, and the exalted rank of many of its Knights, occupies a distinguished place. Its history has been investigated by two of the most celebrated of English antiquaries, Selden and Ashmole, and by the most learned of heralds, Anstis. Following their example, and certainly *cum passibus æquis*, another member of the College of Arms—a Society which has been adorned by a Camden, a Vincent, a Dugdale, and a Lodge, and which still retains its literary reputation—has now given us the fruits of the labour of many years devoted to the illustration of that noble Order. In our opinion, (and it is no slight praise,) Mr. Beltz's 'Memorials' deserve, for research and ability, to be ranked with the works of his predecessors; and no historical library can be complete without them. Ashmole's well known volume appeared in 1672, and Anstis's valuable edition of the "Liber Niger," or Register of the Order, in 1724, since which time no effort has been made either to continue its annals, or to throw new light on the obscurity in which its origin is involved.

Mr. Beltz's volume contains a "Summary view of the History of the Order," followed by a Chronological List of the Knights and of the Ladies who have been admitted into it; the Annals of the Order during the reign of Edward III., and Biographical Notices of the Knights elected by that Sovereign; Annals of the Order during the reign of Richard II., with Biographical Notices of the Knights elected by that Monarch; and an Appendix of Documents and Proofs.

The most interesting points in the History of the Garter are, the *exact date* and the *precise cause* of its institution; and as Mr. Beltz seems to have collected every known fact, and to have brought to the inquiry a mind well adapted, both by nature and professional habits, for such an investigation, we shall have all the assistance for our present object—*an attempt to fix the date of the institution* of the Order—which it is possible to receive.

After giving a brief, but satisfactory, sketch of the rise of Chivalry, Mr. Beltz thus speaks of the foundation of the Order of the Garter:—

"The precise date of the foundation of the Order of the Garter, and the circumstances immediately connected with that memorable event, are not recorded in our national muniments. The annals of the Order, previous to the fourth year of Henry V., are lost; and the conjectures of the writers who, at a period remote from that era, have pretended to solve this historical problem, and who are chiefly of the age of Henry VIII. are entitled to slender credit. It is proposed, therefore, to concentrate the evidence which has descended to us upon the point, and to offer an impartial summary of such portions of it as may be considered to be authentic. In the absence of any public record of the fact, the date of the foundation has been placed at different periods between the eighteenth and twenty-fifth years of Edward's reign, or from 1344 to 1351. The prevailing hypothesis, that the Order was instituted in the twenty-third year, 1349, rests principally, upon the preamble to the two most ancient exemplars of the statutes, which are printed in the appendix to Ashmole's treatise. It is evident that these copies of the statutes could not have been contemporary with the foundation. In the first place, in enumerating the primary companions, they mention the *duke* of Lancaster and the *earl* of Stafford by titles to which those personages were not advanced until the twenty-fifth year of the King; and, secondly, they contain a reference to a mulct enacted by a *prior* decree, and to the customary observance of *former* regulations within the Order. The exemplars in question were, therefore, probably not more ancient than the reign of Henry V., seventy years after the institution."

As the date of 1349, though given in the statutes and credited by Ashmole, is indisputably wrong, we shall bring the question at issue immediately before our readers by stating that the doubt lies between the years 1344 and 1347, or 1348. Mr. Beltz, like Selden and Anstis, adopts Froissart's statement (which it is desirable to give at length), that the Order was founded, the Knights chosen, and all its details arranged, on St. George's day, 1344:—

"At this time Edward King of England resolved to rebuild the great castle of Windsor, formerly built and founded by King Arthur, and where was first set up and established the noble Round Table, from whence so many valiant men and Knights had issued forth to perform feats of arms and prowess throughout the world. And the said King created an Order of Knights, to consist of himself, his children, and the bravest of his land. They were to be in number *forty*, and to be called Knights of the blue Garter; their feast to be kept and solemnised at Windsor annually on St. George's day. And, in order to institute this festival, the King of England assembled earls, barons, and knights from his whole realm, and signified to them his purpose and great desire to found the same. In this they joyfully concurred; for it appeared to them to be an honourable undertaking, and calculated to nourish affection amongst them. Then were elected *forty* Knights known and celebrated as the bravest of all the rest; and they bound themselves to the King, under their seals, by oath and fealty, to keep the feast, and obey the ordinances which should be agreed upon and devised. And the King caused a chapel of St. George to be built and founded within the castle of Windsor; established canons therein for the service of God; and provided and endowed them with a good and liberal revenue. And, in order that the said feast might be promulgated in all countries, the King of England sent his heralds to publish and proclaim the same in France, Scotland, Burgundy, Hainault, Flanders, Brabant, and the German empire; granting to all Knights and esquires, who should be willing to come, safe conduct until fifteen days after the feast. And there was to be held at this feast a jousting by *forty* Knights, within the lists, against all comers, and also by *forty* esquires. And this feast was to be celebrated on St. George's day next coming, which would be in the year of grace one thousand three hundred and forty-four, at Windsor Castle. And the queen of England, accompanied by three hundred ladies and damsels, all noble and gentlewomen, and uniformly apparelled, were to be present. * * St. George's day drew near, when this grand feast was to be celebrated in Windsor Castle. The King made there great preparations; and there were present the earls, barons, knights, ladies, and damsels of the Kingdom of England. The festivities were on a grand and noble scale, with much feasting and tourneying for fifteen days. Many Knights from Flanders, Hainault, and Brabant, crossed the sea, in order to be present on the occasion; but from France there came none."

In this statement there are confessedly two errors,—1st, only *one* of the King's "*children*" was elected at the time of the institution of the Order, and no other of his sons was chosen until 1360; 2nd, the number of the Knights, instead of being *forty*, was only *twenty-five*, besides the Sovereign. As Froissart was only nine years old in 1344, his account must have been written long after the Order was established, and at a time when he had ample means of ascertaining the number of the Knights. But let us see how Mr. Beltz accounts for Froissart's mistakes:—

"Arguing from the error in the manuscripts of Froissart respecting the number of the primary companions of the Order (which was certainly not, as therein stated, *forty*, but *twenty-six*, including the Sovereign), it has been inferred, by Ashmole and the opponents in general of the earlier date, that his chronology cannot be relied on; and that he has unwarily identified the year of the first feast with that of the entertainment of the Knights assembled on occasion of the jousts; Windsor being, in both cases, the place of celebration. A possible mistake, however, of the transcribers of the original manuscript (which may have arisen from the incident that *forty* Knights were said to have been appointed to tilt within the lists), in regard to a point which has never been subject to doubt, ought not to invalidate his testimony concerning the date of the first feast, more especially when other facts are produced in confirmation of his narrative. These are—the repairs to Windsor Castle in the early part of the eighteenth year, from which extraordinary preparations are to be inferred,—the completion of St. George's chapel *before* August in the twenty-second year,—and the establishment, in the same year, by the patent founding the chapel, of an additional number of canons to those on the more ancient foundation, and of twenty-four Poor or Alms' Knights. It may also be observed that as, by the fourth and sixth articles of the statutes of the Order, the presentation of the first canons and Poor Knights was reserved to the Founders, the Knights of the Order must have existed as a fraternity before those whom they were thus to nominate."

Upon this passage it is to be observed, that Mr. Beltz does not notice Froissart's error about the King's *children*, and that the proof adduced in support of the Chronicler's narrative, merely shows, what cannot be disputed, that the Order was established *before* August 1348. The fact, however, appears to be, that Froissart has either confounded two transactions with one, or (which is not improbable) that the *design* to institute the Order *preceded* its actual *completion* by nearly four years. There is a record which proves that Edward invited Knights of all nations, with their esquires and attendants, to assist at jousts at Windsor in January 1344, and evidence also exists to show that a "Round Table" was established about that time, so that part of Froissart's statement is certainly true; but the question still remains, whether he is also correct in saying that the Order of the Garter was founded, and the Knights elected, on that occasion. It would be impossible to disprove his assertion that, early in 1344 the King expressed his *intention to found* a Knightly Fraternity; and he may (though we greatly doubt it) then have named the persons of whom it was afterwards to consist; but there is, we think, conclusive evidence that the Order was not finally established, nor the Companions appointed, until more than three years after that time.

It is admitted by Mr. Beltz that the earliest notice of the symbol of the Order, a *garter*, having been used as a badge or ornament, or of the motto, **Honp soyt qui mal y pense**, is in the Account of articles issued out of the Royal Wardrobe for the Christmas sports at Guildford in 1347. Similar articles were furnished for hastiludes at Canterbury, &c. early in 1348; and Mr. Beltz has discovered the material fact, that on the 18th November 1348 payment was made for *twenty-four garters*, which the Prince of

Wales had presented to the *Knights of the Society of the Garter*, and which is ample evidence that the Fraternity had been established, if not before the close of 1347 or early in 1348, certainly before November 1348.

Mr. Beltz then inquires "whether, retrospectively between Christmas 1347, and St. George's Day 1344, there was any time more convenient for the Institution than the last-mentioned date asserted by Froissart?" From April 1344 to August 1347 we agree with him in thinking that there was no period favourable for the purpose; but as Edward and his army returned to England in August 1347, what was there to prevent the Order from having been established towards the close of 1347, at Christmas in which year both the symbol and the motto were undoubtedly in use? But Mr. Beltz says, truly, that the existence of the Order in 1347 is not incompatible with its creation in 1344; and he observes, that Garters, &c. are not mentioned in the Wardrobe Accounts of 1347 as "novel objects, but in terms which justify a presumption that similar entries might be found in documents of the like nature for the two or three antecedent years, should such Accounts be hereafter recovered." It does not seem very obvious to us how any article in such records could appear as *novelties;* and the only question is, whether they were mentioned in earlier Accounts. We are not told that Mr. Beltz has seen any Wardrobe Accounts of an earlier date than those from 29th September 1347 to the 31st January 1348–9 (Appendix, page 379); but he seems to have ascertained that none for two or three antecedent years are known to be in existence. If we are rightly informed, no Wardrobe Accounts, between April 1344 and December 1345, are now extant; but those from 1341 to the 10th April 1344 are in the Chapter House at Westminster; and if the first Feast of the Order was, as Froissart says, and as Mr. Beltz believes, celebrated on the 23rd April 1344, the Robes and Garters worn on the occasion must have been prepared, at the latest, in the month of February or March, and some trace of them would therefore probably have appeared in the Accounts ending on the 10th April in that year; but we believe that they do not contain the slightest notice of the kind.

It must also be remarked, that the Wardrobe Accounts, beginning on the 29th September 1347, quoted by Mr. Beltz, contain the expenses of the King's tailor from the 21st December 1345, and that the first mention of Garters therein, is for the festivities at Christmas in 1347, two years after those expenses commence; so that there is no indication whatever of the ensign or motto of the Order before the 10th April 1344, nor between December 1345 and December 1347,—facts which are scarcely consistent with the Order having been completely formed, its Knights elected, and its ensign appointed, in April 1344.

But there is yet stronger evidence that the Order could not have been established so early as the year 1344. It is indisputable that all the Founders were *Knights*, at the time of their reception into the Fraternity; hence, if it can be proved that any one of them was not Knighted until July 1346, Froissart's statement must, we apprehend, fall to the ground. Next to the Sovereign, the principal Knight of the Garter was the Prince of Wales, who, at the age of sixteen, made his first essay in arms, by accompanying his father and the army to France in 1346. They landed at La Hogue on the 12th of July, and the King immediately conferred the honour of Knighthood on the young Prince. This fact is placed beyond controversy, by a letter from the Peers, who were with the army at Calais, in September 1346, to the Peers in Parliament, stating that "Le Roi a son arrivaill a la Hogue en Normandye, fist son eisne filz le Prince de Gales, *Chivaler*," and the exact date of their landing at La Hogue is fixed by another contemporary document. It also appears that many other persons were Knighted at the same time; and a MS. in the Bodleian Library, cited by Dugdale and by Mr. Beltz, expressly names Sir William Montacute, Earl of Salisbury, and Sir Roger Mortimer, Earl of March, (two of the Founders,) as having then been Knighted; and in a record, dated on the 20th of May in that year, Montacute, who was then a minor in the King's custody, is not described as a *Knight*. The learned author of the 'Memorials' feels the full weight of this objection to the accuracy of Froissart's narrative, and thus struggles against it:—

"An argument, of more apparent force than any other, might be raised against the foundation in 1344 from the Knighthood of the Black Prince on his landing at La Hogue, on the 12th of July 1346, and the conferring of the same honour immediately afterwards by himself upon the Earl of Salisbury and Sir Roger Mortimer, his young companions in arms, and who were also Founders of the Order of the Garter. If Knighthood was, according to the second statute, a necessary qualification for admission into it, then the Prince and his two companions, receiving Knighthood in 1346, were, at the time of such reception, not already Knights of the Order; and the Order had, therefore, not been founded at that date. But it is clear, from the public records, that the object of the Knighthood of the Prince upon that occasion was, to enable his royal father to claim from his subjects the accustomed aid due upon the Knighthood of the King's eldest son; an aid which, by the statute of Westminster, could not be levied until the heir-apparent had completed his fifteenth year. The ceremony in question, at La Hogue, does not, therefore, preclude the supposition that the young heroes had previously been honoured with the degree of Knight-bachelor; and that they were, on so memorable an occasion, and as a stimulus to their exertions at their entrance upon the theatre of war, advanced to the rank of Banneret. As it was a maxim in chivalry that none but a Knight could confer the dignity of Knighthood, and as it is stated, that Prince Edward, upon being created Duke of Cornwall in 1337 (in the seventh year of his age), made twenty new Knights, we must presume that he had himself been Knighted in his early infancy; a custom prevalent not only at that period, but in our own times, in the families of Sovereign Princes."

The idea of any person having, in the fourteenth century, been *twice* Knighted, is not less extravagant than to suppose that a man should have been *twice* baptized, or *twice* ordained. We were therefore induced to trace so startling a statement to its source; and the result affords another proof of the danger of relying upon authorities without examining them. Mr. Beltz cites "Stowe, p. 233, Holinshed, p. 900, and Barnes's Life of Edward III. p. 113," for the young Prince having made twenty new Knights in 1337. Barnes, after mentioning the creation of the Prince as Duke of Cornwall, and of the Earls of Derby, Salisbury, Huntingdon, &c., says, "at which time also the young Duke of Cornwall (afterwards Prince of Wales) made twenty new Knights;" and he refers, like Mr. Beltz, to Stowe and Holinshed; but Barnes's principal authority was Adam de Murimuth, a contemporary chronicler. Now it is enough to shake one's faith in all historical writers, to find, instead of Murimuth, or Holinshed, or Stowe, stating that these Knights were made by the Duke of Cornwall, that both Murimuth and Stowe agree in saying, that the honour was conferred upon them *by the King*—while Holinshed only observes that twenty Knights were made.†

† This mistake is so remarkable, that we shall give the words of Adam de Murimuth, Stowe, and Holinshed, on the subject. Murimuth, (8vo. 1772, p. 88,) after saying that *the King* had created his son Duke of Cornwall, and made several Earls, at Westminster, on the second Sunday in Lent, adds, "*ubi etiam fecit* xxiv *Milites*." Holinshed mentions the same creations, and says, "and the same day *were twenty Knights made*, whose names for briefness we do here omit;" and Stowe, after noticing the creation of the Duke of Cornwall, and of the Earls, says, "The same day *the King made* 20 *Knights*, to wit, Sir Edward Montacute," &c. Mr. James, in his Life of the Black Prince, (Vol. I. p. 89,) has implicitly followed Barnes, though he only cites Stowe and Holinshed, and inserts a note, in which he observes, that "this is a striking example of the fact, that Princes often, before receiving Knighthood themselves, conferred it upon others;" and he then proceeds to point out, that the Prince was not dubbed previous to the expedition into France, in 1346. "The *fact*" is, we believe, about as true as "the striking example." It is refreshing to find that in Ashmole's elaborate Memoir of the Black Prince, there are none of these fanciful statements about his Knighthood.

The suggestion that the Prince of Wales was "advanced to the rank of *Banneret*," at La Hogue, in July, 1346, is as easily disposed of as the former hypothesis. No one can know better than Mr. Beltz, that none above the rank of a Knight was ever made a *Banneret*. Peers bore their banner in the field as a right incidental to their dignity; and we venture to say, there is not a single instance of a Prince, Duke, Marquess, or Earl, nor (after that rank became settled,) Baron, having ever been created a *Banneret*. All authorities define a Banneret to be "esteemed the last among the greatest, viz., *nobilium majorum*, or the first within those of the second rank, and is placed in the middle *between the Barons and the other Knights;*" and every fact on record, as well as the form of the creation, show the improbability of the Prince of Wales having been made a *Banneret*. Moreover, the object of the announcement to Parliament was to obtain the Aid due on *Knighting* the King's eldest son, which could not have been claimed, if he had been made a *Banneret*. If any other arguments were requisite to destroy Mr. Beltz's two hypotheses respecting the Knighthood of the Prince of Wales, in July 1346, they would be unnecessary, because he appears, in his Memoir of the Prince, to have himself abandoned them:—

"At the institution of the Garter he had not completed his fourteenth year; and, although included amongst the Founders, in accordance with the design of his royal father that the eldest son of the Sovereign should be always a constituent member of the Order, the honour of Knighthood was reserved for the moment when he should be armed, and thereby qualified to enter upon his warlike course. This occasion presented itself when, accompanying the King on his memorable expedition against France, he landed at La Hogue on the 12th of July 1346."

How the Prince of Wales could have been "included among the Founders" without being a Knight, pursuant to the second statute cited by Mr. Beltz, or consistently with the title of the Fraternity, as it occurs in the Prince's Household Accounts in November 1348, viz.:—"The *Knights* of the Society of the Garter," is, we confess, not in our power to explain.

But the same difficulty exists with respect to several others of the original Knights of the Garter. Mr. Beltz does not attempt to give any explanation of the Knighthood of Montacute and Mortimer in July 1346; though in the Memoir of Montacute he says, "he received the honour of Knighthood, if not the degree of Banneret, upon landing at La Hogue;" and in that of Mortimer, after expressly stating that he had "at the early age of seventeen, the enviable honour of being one of the Founders" of the Garter, he proceeds: "having, two years afterwards, in 1346, attended the King and the Prince of Wales on their brilliant expedition into France, he is said to have received Knighthood upon their landing at La Hogue, either from the hands of the Sovereign or those of the young Prince immediately after his own investiture with that dignity." In these instances however (which are no less fatal to Froissart's statement than the Knighthood of the Prince of Wales) it would seem that Mr.

Beltz does not consider that either Montacute or Mortimer were *twice* Knighted.

As the date of the Institution, about which there has been so much controversy, in a great degree depends upon the date of the Knighthood of its members, we must pursue the inquiry a little further.

With the time of the Prince of Wales's Knighthood is involved the date of that of Sir Henry Eam, another of the Founders, of whom Mr. Beltz says:—

"It may be reasonably conjectured that he came into England in January 1343–4, amongst the numerous candidates for chivalrous fame who accepted the invitation of King Edward; that he formed one of the happy guests at the *table ronde* at Windsor on that occasion; and that, by some skilful exhibition of his prowess during the splendid jousts, he acquired the high distinction of being numbered among the Founders of the Garter. The only notice which Ashmole could find concerning him is contained in letters patent tested at Westminster on the 28th of June, 1349, being an inspeximus and ratification of a patent granted by Edward Prince of Wales, and dated the 18th of January, 1347–8; whereby, after reciting that Sir Henry Eam had, at the time *when he received Knighthood at the Prince's hands*, voluntarily engaged to serve him during the term of his life, and so long as sufficient provision should be made for his support."

It was a fundamental principle, and the invariable practice of Chivalry, that no one could confer Knighthood unless he were himself a Knight; and even Sovereigns received the accolade from some distinguished subject, before they gave it to others. If therefore the Prince was not Knighted until July 1346, Eam could not have been created until that time; and hence was not a Knight when Mr. Beltz represents him as one of King Edward's "happy guests at the Round Table," a remark which induces us to suggest that *Round Table* did not, as is generally supposed, mean a table at which guests were entertained, but the circular enclosure or Lists, wherein feats of arms were performed, for we have before us a record of the period, in which *Round Table* is used as synonymous with *Jousts*. The probability is, that Eam, as well as Montacute and Mortimer, obtained their spurs at La Hogue either from the hands of the King or the Prince of Wales. Nor is it unlikely that three others of the original Knights of the Garter, namely—Courtenay, Burghersh, and Dabrichecourt, were Knighted on the same occasion, or at Cressy in August following, because in records cited by Mr. Beltz, severally dated on the 20th October 1345 Dabrichecourt,—15th June 1346 Courtenay,—and 26th June 1346 Burghersh, are mentioned but are not designated "Miles" or "Chivaler," though in the same or similar records many other persons are so styled. This observation likewise applies to Audley and to Stapleton, who, it is presumed, were the two Founders of those names, the former being mentioned without that addition, on the 7th July 1346, and 12th April 1347, and the latter in March 1347. Though the omission of the designation is not positive evidence, yet it affords a strong presumption that neither of them was a Knight at those respective dates; but it is enough for the argument that the Order could not have been completely established in 1344, to show, as, we think, we have done, that *four* of the first Companions, viz.—the Prince of Wales, the Earl of Salisbury, the Earl of March, and Sir Henry Eam, were not Knighted until July 1346.

Notwithstanding all our deference to Mr. Beltz's learning and our respect for his abilities, we are convinced that the Fraternity was not finally organized, even if it were founded, until the close of the year 1347, or early in 1348, with which date every fact yet discovered perfectly agrees, while many circumstances cannot possibly be reconciled with Froissart's account.

In a future article we shall discuss the cause of the institution of the Order, and notice the discoveries made by Mr. Beltz respecting some of the early Companions.

Incidents of Travel in Central America, Chiapas, and Yucatan. By John L. Stephens.

[Third Notice.]

The entry of Mr. Stephens into Guatimala, was anything rather than a triumph for diplomacy. There are no hotels in the capital, and the traveller was prepared to apply for hospitality to Mr. Hall, the English Vice-Consul. That gentleman's house, however, was not easily found—and when found not easily entered. The soldiers under Carrera, the republican leader, had "mutinied that day for want of pay, and threatened to sack the city;" their leader had been already in the neighbourhood borrowing, and our representative, deeming discretion the better part of valour, had taken down his flag and barricadoed his door. The next day, Mr. Stephens took possession of the vacant mansion of the American chargé d'affaires—a pretty and comfortable residence,—but the government was yet to be sought out. Carrera was holding the city by a strong hand, and though there were shows of conventions, assemblies, and such like solemn formalities, it was obvious to Mr. Stephens that, as far as diplomacy was concerned, his mission was a failure, and that he was free to turn his eyes on other matters than protocols, constitutions, and treaties. One of the first sights he chronicles was the profession of a nun at the feast of La Concepcion, and a procession in honour of the Virgin. Though the former was wound up by Mr. Stephens embracing the spouse of Heaven,—and doing his part, as he flatters himself, very neatly,—we prefer the latter:—

"All the streets through which the procession was to pass were strewn with pine leaves, and crossing them were arches decorated with evergreens and flowers; the long balconied windows were ornamented with curtains of crimson silk, and flags with fanciful devices. At the corners of the streets were altars, under arbours of evergreens as high as the tops of the houses, adorned with pictures and silver ornaments from the churches, and the whole covered with flowers. Rich as the whole of Central America is in natural productions, the valley of Guatimala is distinguished for the beauty and variety of its flowers; and for one day the fields were stripped of their clothing to beautify the city. I have seen great fêtes in Europe, got up with lavish expenditure of money, but never anything so simply beautiful. * * The procession for which all these beautiful preparations were made opened with a single Indian, old, wrinkled, dirty, and ragged, bareheaded, and staggering under the load of an enormous bass-drum, which he carried on his back, seeming as old as the conquest, with every cord and the head on one side broken; another Indian followed, in the same ragged costume, with one ponderous drumstick, from time to time striking the old drum. Then came an Indian with a large whistle, corresponding in venerableness of aspect with the drum, on which, from time to time, he gave a fierce blast, and looked around with a comical air of satisfaction for applause. Next followed a little boy about ten years old, wearing a cocked hat, boots above his knees, a drawn sword, and the mask of a hideous African. He was marshalling twenty or thirty persons, not inaptly called the Devils, all wearing grotesque and hideous masks, and ragged fantastic dresses; some with reed whistles, some knocking sticks together; and the principal actors were two pseudo-women, with broad-brimmed European hats, frocks high in the necks, waists across the breast, large boots, and each with an old guitar, waltzing and dancing an occasional fandango. How it happened that these devils, who, of course, excited laughter in the crowd, came to form part of a religious procession, I could not learn.—Next, and in striking contrast, came four beautiful boys, six or eight years old, dressed in white frocks and pantalettes, with white gauze veils over wreaths of roses, perfect emblems of purity; then four young priests, bearing golden candlesticks, with wax candles lighted; and then four Indians, carrying on their shoulders the figure of an angel larger than life, with expanded wings made of gauze, puffed out like a cloud, and intended to appear to float in air, but dressed more after the fashion of this world, with the frock rather short, and the *suspenders* of the stockings of pink riband. Then, borne as before, on the shoulders of Indians, larger than life, the figure of Judith, with a drawn sword in one hand, and in the other the gory head of Holofernes. Then another angel, with a cloud of silk over her head, and then the great object of veneration, La Virgina de la Concepcion, on a low hand-barrow, richly decorated with gold and silver, and a profusion of flowers, and protected by a rich silken canopy, upborne on the ends of four gilded poles. Priests followed in their costly dresses, one under a silken canopy, holding up the Host, before the imaginary splendour of which all fell on their knees. The whole concluded with a worse set of devils than those which led the procession, being about five hundred of Carrera's soldiers, dirty and ragged, with fanaticism added to their usual expression of ferocity, and carrying their muskets without any order; the officers dressed in any costume they could command; a few, with black hat and silver or gold band, like footmen, carried their heads very high. * * At the head of the street the procession filed off in the cross streets, and the figure of the Virgin was taken from its place and set up on the altar. The priests kneeled before it and prayed, and the whole crowd fell on their knees. I was at the corner near the altar, which commanded a view of four streets, and rising a little on one knee, saw in all the streets a dense mass of kneeling figures, rich men and beggars, lovely women and stupid-looking Indians, fluttering banners and curtains in balconied windows, and the figures of angels in their light gauze drapery seeming to float in air; while the loud chant of the crowd, swollen by the deep chorus of the soldiers' voices, produced a scene of mingled beauty and deformity at once captivating and repulsive. This over, all rose, the Virgin was replaced on her throne, and the procession again moved. At the next altar I turned aside and went to the square in front of the Church of San Francisco, the place fixed for the grand finale of the honours to the Virgin, the exhibition of fireworks!"

We have more than once alluded to Carrera; the reader shall have a portrait of him:—

"At the time of my visit (says Mr. Stephens) he was more absolute master of Guatimala than any king of Europe of his dominions, and by the fanatic Indians called el Hico de Dios, the Son of God, and nuestro Señor, our Lord. When I entered the room he was sitting at a table counting sixpenny and shilling pieces. Colonel Monte Rosa, a dark Mestizo, in a dashing uniform, was sitting by his side, and several other persons were in the room. He was about five feet six inches in height, with straight black hair, an Indian complexion and expression, without beard, and did not seem to be more than twenty-one years old. He wore a black bombazet roundabout jacket and pantaloons. He rose as we entered, pushed the money on one side of the table, and, probably out of respect to my coat, received me with courtesy, and gave me a chair at his side. My first remark was an expression of surprise at his extreme youth; he answered that he was but twenty-three years old; certainly he was not more than twenty-five; and then, as a man conscious that he was something extraordinary, and that I knew it, without waiting for any leading questions, he continued, that he had begun (he did not say what) with thirteen men armed with old muskets, which they were obliged to fire with cigars; pointed to eight places in which he had been wounded, and said that he had three balls then in his body. At this time he could hardly be recognised as the same man who, less than two years before, had entered Guatimala with a horde of wild Indians, proclaiming death to strangers. Indeed, in no particular had he changed more than in his opinion of foreigners, a happy illustration of the effect of personal intercourse in breaking down prejudices against individuals or classes.

He had become personally acquainted with several, one of whom, an English doctor, had extracted a ball from his side; and his intercourse with all had been so satisfactory, that his feelings had undergone an entire revulsion; and he said that they were the only people who never deceived him. He had done, too, what I consider extraordinary; in the intervals of his hurried life he had learned to write his name, and had thrown aside his stamp. I never had the fortune to be presented to any legitimate king, nor to any usurper of the prerogatives of royalty except Mohammed Ali. Old as he was, I gave him some good advice; and it grieves me that the old lion is now shorn of his mane. Considering Carrera a promising young man, I told him that he had a long career before him, and might do much good to his country; and he laid his hand upon his heart, and with a burst of feeling that I did not expect, said he was determined to sacrifice his life for his country. With all his faults and his crimes, none ever accused him of duplicity, or of saying what he did not mean; and, perhaps, as many self-deceiving men have done before him, he believes himself a patriot. I considered that he was destined to exercise an important, if not a controlling influence on the affairs of Central America; and trusting that hopes of honourable and extended fame might have some effect upon his character, I told him that his name had already reached my country, and that I had seen in the newspapers an account of his last entry into Guatimala, with praises of his moderation and exertions to prevent atrocities. He expressed himself pleased that his name was known, and such mention made of him among strangers; and said he was not a robber and murderer, as he was called by his enemies. He seemed intelligent and capable of improvement, and I told him that he ought to travel into other countries, and particularly from its contiguity into mine. He had a very indefinite notion as to where my country was; he knew it only as El Norte, or the North; inquired about the distance and facility for getting there, and said that, when the wars were over, he would endeavour to make El Norte a visit. But he could not fix his thoughts upon anything except the wars and Morazan; in fact, he knew of nothing else. He was boyish in his manners and manner of speaking, but very grave; he never smiled, and, conscious of power, was unostentatious in the exhibition of it, though he always spoke in the first person of what he had done, and what he intended to do. One of the hangers-on, evidently to pay court to him, looked for a paper bearing his signature to show me as a specimen of his handwriting, but did not find one. My interview with him was much more interesting than I had expected; so young, so humble in his origin, so destitute of early advantages, with honest impulses, perhaps, but ignorant, fanatic, sanguinary, and the slave of violent passions, wielding absolutely the physical force of the country, and that force entertaining a natural hatred to the whites. At parting he accompanied me to the door, and in the presence of his villanous soldiers made me a free offer of his services. I understood that I had the good fortune to make a favourable impression; and afterward, but, unluckily, during my absence, he called upon me in full dress and in state, which for him was an unusual thing."

Another interesting "incident" was an excursion out of Guatimala to the volcano of El Agua. The halting-place of most consequence ere the mountain is reached is the ruined city of La Antigua, the second capital of Guatimala, and still full of august ruins, left standing by the earthquake of 1773. But, passing these, and the intermediate village of Santa Maria, we will accompany Mr. Stephens on his scramble:

"The day was very unpromising, and the whole mountain was covered with clouds. As yet the side of the volcano was cultivated. In half an hour the road became so steep and slippery that we dismounted, and commenced the ascent on foot. The Indians went on before, carrying water and provisions, and each of us was equipped with a strong staff. At a quarter before eight we entered the middle region, which is covered with a broad belt of thick forest; the path was steep and muddy, and every three or four minutes we were obliged to stop and rest. At a quarter before nine we reached a clearing, in which stood a large wooden cross. This was the first resting place, and we sat down at the foot of the cross and lunched. A drizzling rain had commenced, but, in the hope of a change, at half-past nine we resumed our ascent. The path became steeper and muddier, the trees so thickly crowded together that the sun never found its way through them, and their branches and trunks covered with green excrescences. The path was made and kept open by Indians, who go up in the winter-time to procure snow and ice for Guatimala. The labour of toiling up this muddy acclivity was excessive, and very soon my young companion became fatigued, and was unable to continue without help. The Indians were provided with ropes, one of which was tied around his waist, and two Indians went before with the rope over the shoulders. At half-past ten we were above the region of forest, and came out upon the open side of the volcano. * * About half an hour before reaching the top, and perhaps one thousand or fifteen hundred feet from it, the trees became scarce, and seem blasted by lightning or withered by cold. The clouds gathered thicker than before, and I lost all hope of a clear day. At half an hour before twelve we reached the top and descended into the crater. A whirlwind of cloud and vapour was sweeping around it. We were in a perspiration; our clothes were saturated with rain and mud; and in a few moments the cold penetrated our very bones. We attempted to build a fire, but the sticks and leaves were wet, and would not burn. For a few moments we raised a feeble flame, and all crouched around it; but a sprinkling of rain came down, just enough to put it out. We could see nothing, and the shivering Indians begged me to return. On rocks near us were inscriptions, one of which bore date in 1548; and on a cut stone were the words,

Alexandro Ldvert
De San Petersbrgo;
Edvardo Legh Page,
De Inglaterra;
Jose Croskey,
De Fyladelfye,
Bibymos aqui unas Botcas
De Champana, el dia 26
de Agosto de 1834.

It seemed strange that three men from such distant and different parts of the world, St. Petersburgh, England, and *Philadelphia*, had met to drink Champagne on the top of this volcano. While I was blowing my fingers and copying the inscription, the vapour cleared away a little, and gave me a view of the interior of the crater. It was a large oval basin, the area level and covered with grass. The sides were sloping, about one hundred or one hundred and fifty feet high, and all around were masses of rock piled up in magnificent confusion, and rising to inaccessible peaks. There is no tradition of this mountain having ever emitted fire, and there is no calcined matter or other mark of volcanic eruption anywhere in its vicinity. The historical account is, that in 1541 an immense torrent, not of fire, but of water and stones, was vomited from the crater, by which the old city was destroyed. Father Remesal relates that on this occasion the crown of the mountain fell down. The height of this detached part was one league, and from the remaining summit to the plain was a distance of three leagues, which he affirms he measured in 1615. The area, by my measurement, is eighty-three paces long and sixty wide. According to Torquemada (and such is the tradition according to Padre Alcantra, of Ciudad Vieja), this immense basin, probably the crater of an extinct volcano, with sides much higher than they are now, became filled with water by accumulations of snow and rain. There was never any eruption of water, but one of the sides gave way, and the immense body of fluid rushed out with horrific force, carrying with it rocks and trees, inundating and destroying all that opposed its progress. The immense barranca or ravine by which it descended was still fearfully visible on the side of the mountain. The height of this mountain has been ascertained by barometrical observation to be fourteen thousand four hundred and fifty feet above the level of the sea. The edge of the crater commands a beautiful view of the old city of Guatimala, thirty-two surrounding villages, and the Pacific Ocean; at least so I am told, but I saw nothing of it. Nevertheless, I did not regret my labour; and though drenched with rain and plastered with mud, I promised myself in the month of February, when the weather is fine, to ascend again, prepared for the purpose, and pass two or three days in the crater. At one o'clock we began our descent. It was rapid, and sometimes dangerous, from the excessive steepness and slipperiness, and the chance of pitching headforemost against the trunk of a tree. At two o'clock we reached the cross; and I mention as a hint for others, that, from the pressure of heavy water-proof boots upon the *doigts du pied*, I was obliged to stop frequently; and after changing the pressure by descending sidewise and backward, catching at the branches of trees, I was obliged to pull off my boots and go down barefooted, ankle deep in mud. My feet were severely bruised by the stones, and I could hardly walk at all, when I met one of the Indians pulling my horse up the mountain to meet me."

On his return, our traveller visited the gigantic and venerable church of Ciudad Vieja, the first capital of Guatimala, destroyed by an earthquake in 1541. Every step in this country seems picturesque, and every page accordingly contains matter for extract: take, for instance, the return from Ciudad Vieja:—

"The exit from this mountain-girt valley was between the two great volcanoes of Agua and Fuego, rising on each side nearly fifteen thousand feet high; and from between the two, so unexpectedly to me as almost to induce a burst of enthusiasm, we overlooked an immense plain, and saw the Pacific Ocean. At a league's distance we reached the village of Alotenango, where, among Indian huts, stood another gigantic church, roofless, and ruined by an earthquake, and where, with the hope, in which I was not disappointed, of seeing them again, I took leave of the cura and Don Pepe. The road between the two great volcanoes was singularly interesting; one with its base cultivated, girt by a belt of thick forests, and verdant to the very summit; the other with three bare and rugged peaks, covered with dried lava and ashes, shaken by the strife of the elements within, the working of internal fires, and emitting constantly a pale blue smoke. The road bears marks of the violent convulsions to which it has been subject. In one place the horse-path lies through an immense chasm, rent asunder by a natural convulsion, over which huge stones, hurled in every direction, lay in the wildest confusion; in another it crosses a deep bed of ashes, and cinders, and scorified lava; and a little farther on strata of decomposed vegetable matter cover the volcanic substances, and high shrubs and bushes have grown up, forming a thick shady arbour, fragrant as the fields of Araby the Blessed. At every step there was a strange contrast of the horrible and beautiful. The last eruption of the Volcan del Fuego took place about twelve years ago, when flames issued from the crater and ascended to a great height; immense quantities of stones and ashes were cast out, and the race of monkeys inhabiting the neighbouring woods was almost extirpated; but it can never burst forth again; its crater is no longer el Boca del Infierno, or the Mouth of the Infernal Regions, for, as a very respectable individual told me, it has been blessed by a priest. After a beautiful ride under a hot sun, but shaded nearly all the way, at three o'clock we reached Escuintla, where was another magnificent church, roofless, and again with its rich façade cracked by an earthquake. Before it were two venerable Ceiba trees, and the platform commanded a splendid panoramic view of the volcanoes and mountains of the Antigua. In the streets were soldiers and drunken Indians. I rode to the house of the corregidor, Don Juan Dios de Guerra, and, with Romaldi for a guide, I walked down to the banks of a beautiful stream, which makes Escuintla, in the summer months of January and February, the great watering-place of Guatimala. The bank was high and beautifully shaded, and, descending to the river through a narrow passage between perpendicular rocks, in a romantic spot, where many a Guatimala lover has been hurried, by the charming influences around, into a premature outpouring of his hopes and fears, I sat down on a stone and washed my feet. Returning, I stopped at the church. The front was cracked from top to bottom by an earthquake, and the divided portions stood apart, but the towers were entire. I ascended to the top, and looked down into the roofless area. On the east the dark line of forest was broken by the curling smoke of a

few scattered huts, and backed by verdant mountains, by the cones of volcanoes, with their tops buried in the clouds, and by the Rock of Mirandilla, an immense block of bare granite held up among the mountain tops, riven and blasted by lightning. On the west the setting sun illuminated a forest of sixty miles, and beyond shed its dying glories over the whole Pacific Ocean. At two o'clock, under a brilliant moonlight, and with a single guide, we started for the Pacific. The road was level and wooded. We passed a trapiche or sugar-mill, worked by oxen, and before daylight reached the village of Masagua, four leagues distant, built in a clearing cut out of the woods, at the entrance of which we stopped under a grove of orange-trees, and by the light of the moon filled our pockets and alforgas with the shining fruit. Daylight broke upon us in a forest of gigantic trees, from seventy-five to a hundred feet high, and from twenty to twenty-five feet in circumference, with creepers winding around their trunks and hanging from the branches. The road was merely a path through the forest, formed by cutting away shrubs and branches. The freshness of the morning was delightful. We had descended from the table of land called the tierras templadas, and were now in the tierras callientes; but at nine o'clock the glare and heat of the sun did not penetrate the thick shade of the woods. In some places the branches of the trees, trimmed by the machete of a passing muleteer, and hung with a drapery of vines and creepers, bearing red and purple flowers, formed for a long distance natural arches more beautiful than any ever fashioned by man; and there were parrots and other birds of beautiful plumage flying among the trees; among them Guacamayas, or great macaws, large, clothed in red, yellow, and green, and when on the wing displaying a splendid plumage. But there were also vultures and scorpions, and, running across the road and up the trees, innumerable iguanas or lizards, from an inch to three feet long. The road was a mere track among the trees, perfectly desolate, though twice we met muleteers bringing up goods from the port. At the distance of twelve miles we reached the hacienda of Narango, occupied by a major-domo, who looked after the cattle of the proprietor, roaming wild in the woods: the house stood alone in the midst of a clearing, built of poles, with a cattle-yard in front; and I spied a cow with a calf, which was a sign of milk. But you must catch a cow before you can milk her. The major-domo went out with a lazo, and, playing upon the chord of nature, caught the calf first, and then the cow, and hauled her up by the horns to a post. The hut had but one waccal, or drinking-shell, made of a gourd, and it was so small that we sat down by the cow so as not to lose much time. We had bread, chocolate, and sausages, and, after a ride of twenty-four miles, made a glorious breakfast; but we exhausted the poor cow, and I was ashamed to look the calf in the face. Resuming our journey, at a distance of nine miles we reached the solitary hacienda of Overo. The whole of this great plain was densely wooded and entirely uncultivated, but the soil was rich, and capable of maintaining, with very little labour, thousands of people. Beyond Overo the country was open in places, and the sun beat down with scorching force. At one o'clock we crossed a rustic bridge, and through the opening in the trees saw the river Michetoya. We followed along its bank, and very soon heard breaking on the shore the waves of the great Southern Ocean. The sound was grand and solemn, giving a strong impression of the immensity of those waters, which had been rolling from the creation, for more than five thousand years, unknown to civilized man. I was loth to disturb the impression, and rode slowly through the woods, listening in profound silence to the grandest music that ever fell upon my ear. The road terminated on the bank of the river, and I had crossed the Continent of America.

"On the opposite side was a long sandbar, with a flagstaff, two huts built of poles and thatched with leaves, and three sheds of the same rude construction; and over the bar were seen the masts of a ship, riding on the Pacific. This was the port of Istapa. We shouted above the roar of the waves, and a man came down to the bank, and loosing a canoe, came over for us. In the mean time, the interest of the scene was somewhat broken by a severe assault of moschetoes and sandflies. The mules suffered as much as we; but I could not take them across, and was obliged to tie them under the trees. Neither Romaldi nor my guide could be prevailed upon to remain and watch them; they said it would be death to sleep there. The river is the outlet of the Lake of Amatitan, and is said to be navigable from the Falls of San Pedro Martyr, seventy miles from its mouth; but there are no boats upon it, and its banks are in the wildness of primeval nature. The crossing-place was at the old mouth of the river. The sandbar extends about a mile farther, and has been formed since the conquest. Landing, I walked across the sand to the house or hut of the captain of the port, and a few steps beyond saw the object of my journey, the boundless waters of the Pacific. When Nunez de Balboa, after crossing swamps and rivers, mountains and woods, which had never been passed but by straggling Indians, came down upon the shores of this newly-discovered sea, he rushed up to the middle in the waves with his buckler and sword, and took possession of it in the name of the king his master, vowing to defend it in arms against all his enemies. But Nunez had the assurance that beyond that sea 'he would find immense stores of gold, out of which people did eat and drink.' I had only to go back again. I had ridden nearly sixty miles; the sun was intensely hot, the sand burning, and very soon I entered the hut and threw myself into a hammock. The hut was built of poles set up in the sand, thatched with the branches of trees; furnished with a wooden table, a bench, and some boxes of merchandise, and swarming with moschetoes. The captain of the port, as he brushed them away, complained of the desolation and dreariness of the place, its isolation and separation from the world, its unhealthiness, and the misery of a man doomed to live there; and yet he feared the result of the war, a change of administration, and being turned out of office! Toward evening, rested and refreshed, I walked out upon the shore. The port is an open roadstead, without bay, headland, rock or reef, or anything whatever to distinguish it from the line of the coast. There is no light at night, and vessels at sea take their bearings from the great volcanoes of the Antigua, more than sixty miles inland. A buoy was anchored outside of the breakers, with a cable attached, and under the sheds were three large launches for embarking and disembarking cargoes. The ship, which was from Bordeaux, lay off more than a mile from the shore. Her boat had landed the supercargo and passengers, since which she had had no communication with the land, and seemed proudly independent of so desolate a place. Behind the sandbar were a few Indian huts, and Indians nearly naked were sitting by me on the shore. Yet this desolate place was once the focus of ambitious hopes, high aspirations, lust of power and gold, and romantic adventure. Here Alvarado fitted out his armament, and embarked with his followers to dispute with Pizarro the riches of Peru. The sun was sinking, and the red globe touched the ocean; clouds were visible on its face, and when it disappeared, ocean and land were illuminated with a ruddy haze. I returned to the hut, and threw myself into my hammock. Could it be that I was again so far from home, and that these were the waves of the great Southern Ocean breaking on my ears?"

We were unwilling to abridge this picturesque description, and must therefore deny ourselves the pleasure of making further extracts this week. We shall, however, return to Mr. Stephens's book again—to exhaust it would be impossible; as we are still far from having reached the end of the first volume: and the second is even richer in matter.

OUR LIBRARY TABLE.

A Decimal System of Money, Weights, Measures, and Time, by Decimus Maslen.—Richie Moniplies spoiled his master's job by slipping in a "bit sifflication" of his own, which, as it happened, came uppermost. This is the model which most people follow who want to advocate any reform. As to reformers of the coinage, there is hardly one who can stick to the thing wanted, without some intolerable *sine qua non* attached to it. A says, decimal coinage, but take a crown instead of a pound; B says, decimal coinage, but while you are about it, alter all your weights and measures; C says, decimal coinage, but pray remember to put in a silver standard: and so on. The author before us proposes to alter everything, even to our measure of time. Ten hours are to make one day and night: how are the factory children to work ten hours and a half, we should like to know? Seriously, a decimal coinage would be a most excellent thing; and we shall have it at last, if people are not in the mean time so frightened by the "bit sifflications" which are handed in with proposals for it, that they are prevented from attending to the main object. The consideration of the subject is calmly and spreadingly making its way: we only say to our readers, don't be alarmed if some of those who take hold of the tow-rope have more in their baskets than you would like to see in the boat. As to the rest, this treatise of Mr. Maslen (if that be his name, but it has a forgery look about it which is not decent in a coinage author) has many amusing suggestions, and a good deal of scattered information in it. But it is not fair to quote an author who says it is known that the year is 365.24224 solar days, or about 365¼ days, and (within the marks of quotation) to make him say it is known that the year is 365¼ such days exactly. Marks of quotation should be sacred, and should give the passage quoted, even to spelling, punctuation, and italics.

Theory of the Moon, Part IV., by J. W. Lubbock, Esq.—A tract of a high mathematical character. The reader who does not busy himself with the developement of the lunar inequalities, may be interested by the new discussion of Lagrange's problem of the variation of arbitrary constants, in page 398.

Tour in Austrian Lombardy, the Northern Tyrol, and Bavaria, in 1840, by John Barrow, Esq.—What was said some short time since, touching the Italian moiety of Miss Sedgwick's published letters, and reiterated only last week with reference to Mr. Lee's 'Memoranda,' applies yet more strongly to these journals of a summer tour. They are agreeably written, faithful and minute; but, this stated, our review is complete, since not a passage offers itself for extract.

The Wye and its Associations, a Picturesque Ramble, by Leitch Ritchie, Esq.—There is always pith in Mr. Ritchie's paragraphs—sometimes smartness (not unmixed with oracular coxcombry), and he is the very man for a ghost story or a legend of sorcery. But he seems to have taken so little pains in the collection of his materials for the present volume, that except as regards the getting up, and the quality of the illustrations, it is but little more entertaining than the formal guide books with which travellers were content in the reign of the third George.

On the Principles of Sound, by R. W. Webster.—This tract contains general principles, their application to public buildings, and an account of the ear. We suspect the author to be more of the anatomist than of the natural philosopher. We do not know that sound is "a property inherent in the atmosphere;" nor do we quite enter into the "centrifugal force which acts in all directions alike." And though several naval engagements have "commenced in a storm, and terminated in a tranquil state of the sea," we greatly doubt whether it was the "sonorous pressure" of the air, caused by the noise of the firing, which did it. Would not this happen in any storm, if the combatants fought long enough? The question of public buildings is a very difficult one; we believe that rooms which, as far as can be, are fac-similes of each other, are found to differ very much in acoustical qualities.

Guy Fawkes, or the Gunpowder Treason: an Historical Romance, by W. H. Ainsworth, 3 vols.—According to the current fashion, the whole of this romance is given to the public in three volumes, simultaneously with the appearance, in *Bentley's Miscellany*, of the closing chapters. Mr. Ainsworth suffers as little by this process of collection as most of his compeers; and 'Guy Fawkes' is neither the best nor the worst of his novels. Artistically to speak, however, his treatment of this historical passage is anything but satisfactory. The arch plotter appears on the scene like an apparition—that is, unexpectedly, and without the slightest account of his previous wanderings. He was wanted—and is there. So might a novelist summon in turn, a score of principal characters, to carry on the miracles or adventures of his fable. But such impromptu entrances and exits could have no place in a real work of art. Thus abruptly, too, do we find the heiress of Ordsall Hall entangling herself in his designs without the slightest intention

of aiding them. Thus inconsistently does a staunch and sturdy Protestant aid and abet all manner of escapes on the part of the Catholic conspirators—coming and going as he lists, and though threatened with suspicion, never fairly falling under its ban. Superfluously, too, as it were "to make up a show," are the escapes and achievements of Guy's comrades followed, till the curtain falls on a stage crowded with dead bodies, in the approved fashion of the old Surrey! Mr. Ainsworth is not happier than usual in the presentment of his historical characters. He gives us a glimpse of the royal nose that smelt gunpowder in the anonymous note of warning—but the speeches of the King might, for any character they indicate, have been given to Fathers Garnet and Oldcorne. Nor has our author lost the habit of making all his personages talk big, and talk out of season. Thus, Dr. Dee, the redoubtable, at the awful moment when he is about to make a dead body speak, enumerates, encyclopædia fashion, all the ancients who have performed the like feat, beginning with the Witch of Endor. The name we have mentioned, and the deed, suggest scenes of necromancy—we have already indicated scenes of pursuit; and have but to add, that the romance contains a proper seasoning of scenes of torture. To speak seriously, the last are in the worst possible taste; and the popularity argued by their constant introduction on the part of a current romancer, is a bad sign of the times. But the *butchery*-school, like the *goblin*-school, has, we trust, its date.

The Joys of Heaven, by a Layman.—These speculations on futurity are neither original nor interesting.

The season for Guide Books being come—though, alas! without the weather—we have, of course, the usual complement of manuals, &c. to report upon. The second edition of *Black's Picturesque Tourist of Scotland* seems as nearly as possible what a guide-book ought to be—sensible, concise in its information, with that touch of poetry which is no less indispensable in such a haunted land than details of distances and historical facts, but which requires sound taste in its introduction. *Black's Picturesque Guide to the English Lakes*, though it cannot hope to supersede Wordsworth's, may lie amicably beside it. Both these works are copiously illustrated with highly finished steel engravings. Mr. Pearce's *Guide to Ancient and Modern York* is less luxuriously got up than the Edinburgh guide-books, but it is carefully executed, and worthy of the notice of visitors to one of the most interesting of our old English capitals.

List of New Books.—Scheme of Prophecy, from Daniel, fc. 8vo. 3*s.* 6*d.* cl.—Job Abbott, or Reasons for abandoning Trinitarian, Arian, and Unitarian Doctrines, 12mo. 4*s.* 6*d.* cl.—A Scriptural Illustration of the 26th and 27th Verses of the First Chapter of Genesis, 12mo. 5*s.* cl.—An Author's Mind, The Book of Title-Pages, edited by M. F. Tupper, Esq. M.A. post 8vo. 10*s.* 6*d.* cl.—South African Sketches, by Capt. H. Butler, imp. 4to. 31*s.* 6*d.* cl.—Introductory Book to Ollendorff's New Method of Learning German, 12mo. 5*s.* cl.—Edwards's Virgilii Æneis, fc. 3*s.* 6*d.* cl.—Edwards's Quæstiones Virgilianæ, fc. 3*s.* cl.—Edwards's Virgil, with the Quæstiones, 1 vol. fc. 6*s.* cl.—Eve's Early Educator, 12mo. 1*s.* 6*d.* cl.—Child's Book of Facts, 18mo. 2*s.* 6*d.* cl.—Sturmer, a Tale of Mesmerism, by J. F. Romer, 3 vols. post 8vo. 31*s.* 6*d.*—The Pic-nic Papers, edited by "Boz," illustrations by George Cruikshank, 3 vols. post 8vo. 31*s.* 6*d.* cl.—D'Aubigné's Reformation, Part II. by W. K. Kelly, (Popular Library Edition,) royal 8vo. 3*s.* 6*d.* swd.—Infant Baptism Scriptural, by W. J. Shrewsbury, 12mo. 3*s.* cl.—A Hand-Book for Lake Visitors, with Map, 12mo. 3*s.* cl.—Pritchard's History of Infusoria, with numerous engravings, 8vo. 30*s.* cl.—Chronicles of Crime, by Camden Pelham, 2 vols. 8vo. 28*s.* cl.—Gilbert's Map of London, in case, 2*s.* 6*d.*—George Julian, the Prince, 8vo. cl. 10*s.*—Gilbert's Modern Atlas, 4to. 2*l.* 10*s.* cl., 2*l.* 15*s.* hf-morocco.—Gilbert's Modern Atlas, Section II. 4to. 20*s.*—Companion to Gilbert's Atlas, the World Described, by R. Mudie, 12mo. 6*s.* cl.—Ince's Outlines of English History, 18mo. 1*s.* swd.—The Critic in Parliament and in Public since 1835, 12mo. 5*s.* cl.—Price's Modern Gardener, enlarged and improved, 12mo. 1*s.* 6*d.* cl. lettered.—Nasmyth on the Development and Structure of the Teeth, 9 plates, 8vo. 5*s.* cl.—Dr. Jacobi on Hospitals for the Insane, 8vo. 9*s.* cl.—Biblical Cabinet, Vol. XXXII. 'Rosenmuller on the Messianic Psalms,' 12mo. 7*s.* 6*d.* cl.—Burton's Lectures on the Milennium, 12mo. 7*s.* cl.—Bunyan's Practical Works, Vol. III. 12mo. 5*s.* cl.—Low's Comparative Register of the House of Commons, 4th edit. 18mo. 1*s.*, interleaved, 1*s.* 6*d.*—Worgan's Gems of Sacred Melody, 1 vol. royal 8vo. 15*s.* cl.—Parley's Tales of the World, 18mo. 6*s.* 6*d.*—Greener's Science of Gunnery, 8vo. 15*s.* cl.—Keith's Evidence of Prophecy, 24th edit. 12mo. 4*s.* 6*d.*—Newman's Difficulties of Elementary Geometry, 8vo. 8*s.* 6*d.*—Conversations of James Northcote, R.A., by William Hazlitt, post 8vo. 4*s.* cl.—Aird's Self-Instructing French Grammar, square 1*s.* 6*d.* bds.

THE VOICE OF CANDIA.

WHAT voice is this, through summer's air,
O'er slumbering Europe sent?
It seems a nation's ceaseless prayer,
With sounds of battle blent.
O shields of earth, arise, and save
The last of Greece—her free and brave!
For Candia is no more a slave,
The time-worn chain is rent;—
Rise, for the sun upon her shore
Beholds the Christian flag once more!

What! shall the Tartar bind his yoke
Where Minos filled his throne—
Where Jove in his first thunder spoke,
And early wisdom shone;—
While yet old Ida greets the morn,
As when the Grecian gods were born,
And on the Othman smiles in scorn—
Our mighty and alone?
For long as Freedom's sun hath set,
Its lingerings gild our mountains yet!

Still fair in desolation stand
Their summits, temple crown'd,
Where pilgrims come from every land,
For ours is holy ground:
Though given to it were blood and tears,
And war that wastes, and fire that sears,
And o'er its glory countless years
Have rolled, a flood profound;
But lights from classic ages shine
Forever o'er each ruined shrine.

Oh for a voice like his, that woke
The starless night of time;
Whose words the Paynim bondage broke
In Syria's sacred clime!
Oh for the faithful spent in vain,—
For the crusader's arm again,
To sweep from earth the sword and chain
Of Moslem power and crime!
But ah! they past like desert wind,
And left a blighted track behind!

Lands of the Cross! repay at last
The gold from Hellas showered;
Hers were the treasures of the past,—
On you that wealth she poured.
If in her lore ye found or sought
The deathless song or glorious thought,
By all that Greece inspired or taught,
Now lend her but a sword!—
For long ago the days are done,
When gods her ancient battles won.

God of the Cross! to thee we turn
Our best and latest trust,
When foes oppress and brethren scorn,
Eternal one and just!
Hast thou not made and called us free?—
Were not our spirits filled by thee
With the deep love of liberty?—
And if our country must
Fall, 'neath the tyrant's vengeful hand,
Receive us to thy better land.

F. B.

OUR WEEKLY GOSSIP.

AT the Meeting of the Association (see page 622), a letter was read from Sir John Franklin, wherein he adverted to the hopes and prospects of Captain Ross when he sailed from Van Diemen's Land. Letters and newspapers have since been received from Hobart Town, which announce the safe return of the Expedition,—officers and crew all well. The following letter, dated the 17th of April, 1841, received at Lloyd's, contains the fullest account we have yet seen;—

"By the last list you will have perceived the return to this port of Her Majesty's ships *Erebus* and *Terror*, Captains Ross and Crozier. Nothing official has as yet transpired here; but it is generally understood that the expedition has been very successful, and these British ships proceeded 11 degrees lower south than the *Astrolabe* and *Zélée*, and four degrees more than any other vessel has ever yet reached; that they were enabled to fix the exact position of the south magnetic pole at about 100 miles distant thence; and that some extraordinary mistake appears to have affected the calculation of the Americans who approached these regions." The *Erebus* and *Terror* entered the main part of the ice, on their voyage of discovery towards the South Pole, on the 5th of January last, being then in latitude 66. 45. S., and longitude 174. 13. E. On the 10th of the same month they descried land in lat. 71. 56. S., long. 171. 17. E.; and coming up to it on the 12th of January, they took possession of it in the name of Her Majesty. This land extends south to degree 79. Proceeding onwards, a large volcano, emitting dense clouds of smoke, was observed on the 28th of January, in lat. 77. 31. S., long. 167. 30. E. On the 2nd of February they reached to the utmost extent of their voyage, viz., lat. 78. 4. S., and long. 173. 12. W., and were here stopped by icebergs 150 feet high, and by fields of ice which were traced as extending 300 miles to the eastward. The expedition penetrated about four degrees further south than the American or French discovery vessels; and although in the course of the voyage it was enabled to verify the correctness of many of the spots laid down in the charts of the former, they also discovered one singular error—namely, the existence of water over a large space described as land, and which the *Erebus* and *Terror* actually sailed over for a very considerable distance, leaving the land 300 miles from the latitude laid down in the American chart. It is said that the sea in this direction abounds in seals and sperm whales. Not a single casualty occurred among the crews, and the vessels reached Hobart Town in safety, where they will remain till the season arrives for further operations. The result of the attempt already made has been highly satisfactory, the vessels having got within what was supposed by the indication of the needle to be 100 miles of the magnetic pole."

The Hobart Town papers mention that so soon as the season promises a chance of additional triumph, Captain Ross will proceed again to explore the Antarctic regions.

We cannot omit to notice among the most memorable things of the week, Sir I. Brunel's passage *under* the Thames, from Rotherhithe to Wapping, in testimony of the completion of his long-canvassed work. There remains still some trifling distance between the shield and the shaft on the Middlesex side of the river: but the task is virtually accomplished.

We were requested some weeks since, by the Tuscan Consul General, to give publicity to the following announcement, which we should have done at once, with pleasure, but that his letter was mislaid:—

In addition to the public notice issued by the Chevalier Ferdinando Tartini, on the 28th of December last, respecting the meeting of scientific persons to be held at Florence during the latter part of the month of September, His Imperial and Royal Highness the Grand Duke of Tuscany has kindly granted, for daily use, a sufficient number of rooms belonging to the Museum of Physical and Natural History, annexed to the Palazzo Pitti; and for the general meetings of the whole learned body the saloon, known by the name of the Cinquecento, in the Palazzo Vecchio. An office will likewise be opened on the ground floor of the Palazzo Riccardi, in the Via Larga, where attendance will be given on and after the 10th of September, and where persons visiting Florence to attend this meeting will, on application, receive cards of permanence and admission thereto, and where they may learn where most readily to find convenient lodgings, and how to avail of the advantages presented by this re-union of talent. In order, moreover, that the communications between the learned may during this period be rendered more easy and agreeable, a general table will be provided daily for their convenience, and in the evenings the gallery and library of the Palazzo Riccardi will be open for their recreation.

Thorwaldsen has been banquetting with the distinguished citizens of Munich, and taking honours from the Bavarian King. The latter include the Grand Cross of the Order of St. Michael.—Letters from the same capital mention that the Duchess of Placentia, who has, for the last ten years, resided in Greece, has induced the government of that country to incorporate the Academy of Design and Painting, founded by her last year, with the Polytechnic School; and that King Otho, with a view to rendering the latter institution as effective as possible, has commissioned its Director, the Col. Zentner, to visit all the similar institutions in England, France, and Germany, for the purpose of studying their organization, and introducing such ameliorations as these might suggest.

The well-known Aulic-counsellor André, of Offenbach, who, forty years ago, purchased from the widow of Mozart all the autograph musical manuscripts of the great composer, has resolved—so the journals tell us—on publishing all such as have not yet been given to the press; comprising about 280 distinct works. Amongst these, seven operas are mentioned. There are, also, the score of a ballet intended to be introduced into the opera of 'Idomeneo, re di Creta'—overtures, choruses, &c. for the Baron de Gobeler's drama entitled 'Thamos'—several symphonies for a full orchestra, and a great number of concerted pieces for a variety of instruments.

The Academy of Inscriptions and Belles Lettres, at its sitting of the 30th ult., adjudged its medals for the present year in the following order:—To M. Delpit it gave the first, for his Memoir 'On the Manuscript Sources of the Municipal History of the

Town of Amiens;' to M. Théophile Roussel its second, for his 'Historical Researches on the Life and Pontificate of Urban V., and on that Pontiff's Foundations in France;' and the third to M. Félix Bourquelot, for his 'History of Provins.' The subjects proposed for the prizes for 1842 are,—'An Inquiry into what were amongst the Romans, from the time of the Gracchi to the Reign of Hadrian inclusive, the Composition of the Tribunals, and the Administration of Justice, in regard to the Crimes and Offences charged against Magistrates and Public Officers of every kind;' and 'An Examination into the History of the Establishments formed by the Greeks in Sicily, and their Political Importance; into the Causes of their Power and Prosperity; and an attempt, as far as possible, to determine their Population, Strength, Forms of Government, and Moral and Industrial Condition, as well as their Progress in Letters, Sciences, and Arts, down to the Reduction of the Island into a Roman Province.' For 1843, the following argument is proposed,—'The History of Cyprus, under the Reign of the Princes of the Houses of Lusignan.' We may mention, too, the creation, by the Minister of Public Instruction, of two new professorships at the *Collège de France*,—one for the cultivation of the various literatures of the Germanic nations—the other for that of the literatures of Southern Europe.

Some excavations making at Lyons, on the hill of Fourvières, the ancient *Forum* of the Romans, have brought to light a variety of articles, valuable both intrinsically and as objects of art. Amongst these is the complete jewel-case of some great dame of eighteen hundred years ago,—inclosing a necklace of emeralds, with ear-rings to match,—another, apparently of amethysts, but defaced,—a very curious chain, rings, bracelets,—a sandal-clasp, pearls of extraordinary fineness and remarkable size; of all which ornaments the gold is so fine that its brilliancy remains untarnished by time, as if it came to-day from the jeweller.—We may mention, too, while speaking of these exhumations from the tomb of ages, the discovery, by some workmen, in the earth of a cellar in Rome, of a colossal statue, in perfect preservation, representing a chained barbarian, and from the evidence of its style, apparently belonging to the period of the Emperor Adrian.

M. Félix Ravaisson, Inspector General of the Libraries of France, whose mission to explore the libraries and archives of its western departments we last year mentioned to our readers, has just published the result of his researches and the Reports addressed by him to the Minister of Public Instruction. Several of these collections,—the libraries of Avranches and Alençon in particular,—have yielded richly to his inquiries; and, in addition to the curious details which he gives of their contents, some of the manuscripts themselves are printed by M. Ravaisson, with these Reports. Amongst these latter are the variations supplied by a manuscript of the tenth century, in Cicero's treatises *De Oratore* and *Orator*, two unpublished sermons of Saint Augustin, and a letter from Voltaire to Turgot.

The town of Versailles is about to add to its crowded memorials of departed greatness, a monument to one of the most illustrious of its own sons and citizens, the Abbé de l'Epée. A model of the statue intended to be executed is about to be exhibited in the Court of the Deaf-and-Dumb Institution at Paris; and eighty-three of the pupils of that Institution, some of whom were scholars of the Abbé himself, have headed the subscription in honour of their moral father and intellectual deliverer.

The Paris papers contradict the report, which we had repeated for our readers, that Meyerbeer had accepted the functions of Musical Director at the royal theatres of Berlin. Family arrangements are stated to be the sole motive of his visit to that capital; and his return to Paris a few months hence is announced as certain.

A recent decision of the French tribunals, with regard to the French version of the *libretto* of 'Lucrezia Borgia,' is curious, and subject, we think, to much comment. By this M. Victor Hugo, on the score of right of authorship of the original 'Lucrece,' whence the Italian opera-monger derived his text, has obtained a peremptory injunction against the performance of Donnizetti's music to French words, and a suppression of the entire published edition of the translated work.

To end at home—this is the season of musical as well as of political rumours. We have elsewhere adverted to changes at the Opera, which are confidently reported as likely to take place. We may add, the talked-of engagements of Signora Poggi-Frezzolini, and Signor Poggi, the one as *prima donna* the other as *primo tenore*. But these are early days for any mention of the re-opening of Her Majesty's Theatre. Little less shadowy are the promises which foreshow to us an *Opera Buffa* for early winter—with Signora Gabussi for *prima donna*, the veteran Donzelli (whose voice the foreign journals declare to be unimpaired) for tenor, and *the* Ronconi for *basso*. Some musical movements, however, are more decided. It is known that, on the re-election of the Philharmonic Directors for the ensuing season, three or four of the best experienced among those nominated, declined to act. Surely this is symptomatic; and, that counsel may not come too late, we would once more earnestly recommend that some convocation should take place, at which the recusants should be invited to state their ideas of the measures necessary to be taken for the resuscitation of this establishment. There may, perhaps, be yet time to save it.

Close of the present Exhibition.

BRITISH INSTITUTION, PALL MALL.

The Gallery, with a Collection of Pictures from the Italian, Flemish, and Dutch Schools; also the works of the deceased English Artists, Sir J. Reynolds, Wilson, Gainsborough, Hogarth, and a Selection from the pencil of the late Thomas Stothard, Esq. R.A., IS OPEN DAILY, from Ten in the Morning till Six in the Evening, and will be closed on Saturday, the 28th inst.—Admission, 1s.; Catalogue, 1s.

WILLIAM BARNARD, Keeper.

THE DIORAMA, REGENT'S PARK.

The TWO NEW PICTURES now exhibiting, represent the Interior of the CATHEDRAL OF AUCH, in the South of France, and the SHRINE OF THE NATIVITY, at Bethlehem, taken from a sketch made on the spot by D. Roberts, R.A., in 1839, with various effects of light and shade. Both Pictures are painted by M. Renoux. Open from Ten till Five.

Under Her Majesty's Royal Letters Patent.

DAGUERREOTYPE.

ROYAL GALLERY OF PRACTICAL SCIENCE, Lowther Arcade, West Strand.—Mr. CLAUDET is now taking Portraits and Groups of Figures at this Institution, upon a greatly improved plan; in addition to which, by a new application, Mr. Claudet is enabled, without any additional charge, to fix the Portraits, and render them so durable, that they will not fade or turn black. The state of the weather offers no impediment to the process; and parties are not expected to take their portraits unless perfectly satisfied with the likeness.—A performance on the new musical instrument, the Harpodion, daily.—Microscope, Pyreidotrope, Dissolving Views, Steam Gun, Electric Eel, Models, &c. &c.—Admission, 1s.; Children, half-price.—Open daily from half-past 10 till 6 o'clock.

ROYAL POLYTECHNIC INSTITUTION, Regent Street.—FIRST EXHIBITION of, and Lecture on, BAIN'S ELECTRO-MAGNETIC PRINTING TELEGRAPH, by means of which a banker in London can write a Letter in the office of a correspondent in Edinburgh. The letter, with its answer, can be conveyed the 800 miles in a very few minutes. SIXTY PATENTED ELECTRIC CLOCKS, by BARWISE and BAIN, MOINAU'S PATENTED CLOCKS, CARY'S ORRERY and the NEW DISSOLVING VIEWS, to which a magnificent Fire Scene has been added. PHOTOGRAPHIC PORTRAITS, nearly 2,000 Works which display eminent Art, Science, and Ingenuity. Microscope, Diver, Diving Bell, and popular Lectures and Experiments. CANTON, and other beautiful COSMORAMIC VIEWS, are added to the Evening Exhibition.—Admission, 1s.

THE THAMES TUNNEL

is OPEN daily (Sunday excepted), from Nine o'clock in the Morning until dusk, and is brilliantly lighted with gas. Entrance on the Surrey side of the River, close to Rotherhithe Church. The Foot Passengers' Shaft at Wapping, and the remaining portion of the Tunnel, in order to form a junction with the said Shaft, are now in active progress.—Admittance 1s. each.

Company's Office, Walbrook Buildings, Walbrook, J. CHARLIER, Clerk to the Company.

August, 1841.

N.B. Conveyances to Rotherhithe, by Omnibus, from Piccadilly, Charing-cross, Fleet-street, and Gracechurch-street; and by Steam Boats, from Chelsea, Vauxhall, Lambeth, Hungerford, Old Shades Pier and London Bridge, to the Tunnel Pier at Wapping. Books with Plates descriptive of the Works are sold at the Tunnel, price 1s.

MUSIC AND THE DRAMA

Her Majesty's Theatre.—Things figure by comparison: and the 'Marino Faliero' of Donnizetti sounds, on its revival, as much more forcible, fresh, and charming, than the 'Lucias' and 'Lucrezias' of the same master, as Rossini's 'Otello' or 'Mosè' would do if, after a long sleep, they succeeded 'Marino.'—There are few works which more advantageously exhibit the peculiar powers of Rubini, than this opera: his *scena* in the second act has always been rated by us as a *chef-d'œuvre* of vocal art, and he never executed it more magnificently than on Saturday. Lablache, again, as the *Doge*, has a part which exhibits him to the utmost advantage. Mario sings the *barcarolle* sweetly, but not with so high a finish, or so exquisite a feeling for its undulating rhythm as Ivanoff.—The part of the *Dogaressa* was taken by Mdlle. Löwe: in the first act, exquisitely dressed, in the last, passionately acted: and in both sustained with a zealous attention to detail which might serve as a study to some of her nonchalant sister songstresses. She was more successful than she has hitherto been in London:—truth to say, because she has less to sing. Her voice can never have been a rich or even one: the middle tones (between F and F) are all but inaudible, and the attempt to force them out leads her occasionally into exaggerations of diction, the effect of which is anything rather than happy. The upper tones are never in tune—nor is any ornament of any pretension executed by her without as many unfinished as finished notes. In short, her vocal studies must have been ill conducted: and we fear it is now too late to correct bad habits, which have ripened into organic defects. It would be cruel and discourteous to dwell upon these faults in one, whose aspirations are obviously well directed, had we not an eye to the future. The rumour has been current, not only that Signora Grisi leaves us not to return, but that Mdlle. Löwe has been engaged for the whole of the season of 1842. It is fair, both to themselves, and to the *artiste*, that the frequenters of the Opera should consider how far such an engagement will be acceptable, and how long their eagerness for novelty will enable them to seal their ears to defects, which there is little chance of Time amending.—The ballet world is in "a fine frenzy" touching Cerito, whom many profess to admire, as exceeding any former *danseuse*. Her youth, her freshness, and her elasticity are very engaging—but until she has acquired greater suppleness and grace in the management of her bust and arms—we must think her second rate, as compared with Taglioni or Elssler.

There is so little that will bear close examination in the present state of the drama, that the critical function is almost abrogated, as regards both its art and literature; and the gossiping vein is that best suited to recording the current novelties. It is of little use to deal severely with efforts to amuse the public, made solely with a view to profit; where the artist or the caterer has no higher motive than that of a trader—and we are not bound to exact an unselfish devotion to the nobler purpose of the drama even if we could—it is of little use to apply a high standard of appreciation to representations, got up without reference to anything beyond a momentary success. But a fond attachment to the form of a thing, the soul of which is fled, is a weakness incidental to human nature; and to some such lingering love for the departed spirit of the drama, we plead guilty. We have resolved, however, to confine these secret cherishings of the memory of what is become a non-existence to our own breasts, and though we cannot "be off with the old love" entirely, at least endeavour to "be on with the new," so far at least as to treat the meretricious charmer with courtesy. Nay, more, we determine to take as favourable a view of her factitious attractions as possible, and chronicle the new fashions, and strange whereabouts, of Mistress Motley, in the true quidnunc style. Not to cool upon a good resolve, let us begin at once: and indeed the flirtations of this modern representative of Thalia and Melpomene with *minors* compels us to take a wide range, even from the Surrey to Sadler's Wells, whose old glories seem to be revived again by Messrs. Davidge and Honner. We cannot promise, even in these days of rail-roads, to get so far as Dublin, and tell of the success of Vestris and Charles Mathews there: nor follow the route of errant stars through the provinces; but Astley's shall not be burned down, nor a Jerry Sneak retire from the stage, nor a Surrey Macbeth be engaged at Drury Lane, without our chronicling the event. In short, nothing less than absolute *gobemoucheries* shall escape record; and though we cannot approve of what is worthless or vicious, we will "hint a fault and hesitate dislike" in the gentlest way possible,—and now to our newsmongering.

The Haymarket bills are black with coming revivals of Shakspeare, in which Macready is to play the principal part; meanwhile Sheridan Knowles's plays have supplanted Sir Lytton Bulwer's, 'Virginius' having been produced last Monday, and 'William Tell' being announced for next Monday. Macready's personation of the Roman father is too famous to need fresh eulogy, which his noble and

pathetic performance on this occasion tempts us to indulge in; suffice it to say, that the stoutest nerves and coldest natures yielded to the powerful appeal to their sympathies made by the tenderness, indignation, and anguish of the high-minded father. Indeed his acting was as much above criticism as that of all the other parts, Miss Helen Faucit's *Virginia* alone excepted, was below it. Of the scenery it is charitable to make no mention. A new after-piece of the broadest kind, entitled 'Foreign Affairs; or the Court of Queen Anne,' is an adaptation of 'Les Premières Armes de Richelieu,' in which, eighteen months ago, Mdlle. Dejazet—the incomparable and impudent—was drawing thousands to the *Théâtre Palais Royal*. With us it affords Mdlle. Celeste an opportunity of exhibiting her person in male attire, and turning her broken English to account, as a young attaché of the French embassy, who, to revenge the sneers at his boyship taking a wife, turns Don Giovanni, and fights and intrigues himself into a reputation for manhood. The obvious opportunities for coarse jokes and *double entendre* were not let slip, and the want of wit and originality was supplied by situation and buffoonery, to the amusement of the audience, who relished jests that rather turned our stomach. Splendid costume and scenery are lavished on this piece, not of the most decent kind; and its success with the half-price visitors, will doubtless repay the outlay. Wrench, too, as 'My friend the Captain,' makes great laughter by the easy assurance with which he plays the Jeremy Diddler, whose impudence is scarcely more extraordinary than the blindness of his dupes. The advent of an American genteel comedian, Mr. Placide, in *Sir Peter Teazle*, last night, was too late in the week for anything beyond this announcement. Besides these revivals and novelties, a new play by Sheridan Knowles is said to be in preparation, in which Mr. C. Kean and Miss Ellen Tree are to play principal characters. While the Haymarket is thus carrying on the war, the rival managers of "the houses twain, of Covent Garden and of Drury Lane," are mustering their forces for a fierce campaign; with what result to the drama remains to be seen, and, as regards themselves and the public, to be felt; but whether Covent Garden will open earlier than usual, or Drury Lane so much later as not until Christmas, as reported, we are not informed.

The minors are flourishing, we are told; 'Barnaby Rudge' has already three representatives — Miss Fortescue at the Lyceum, Mrs. Keeley at the New Strand, and Mrs. Honner at Sadler's Wells; but between three such charming actresses, it would be hard to decide who should bear the palm: we recommend those who are interested in the matter to go and see them all, for from what we have seen of each, they are all clever; and the respective personators of *Black Hugh*, *Mr. Chester*, and the mysterious murderer, at the several theatres have also merits of their own, on which, for want of evidence, we are not competent to decide. We have an *ex parte* preference for Miss Fortescue, having caught sight of her wild and gentle face, and unsophisticated manner, and heard her sweet voice and light merry laugh, in one or two scenes: moreover, the Lyceum has the attraction of Keeley's natural and pleasant humour in a translation of a French piece, of one scene and three persons, with the alliterative title of 'A Lady and Gentleman in a peculiarly perplexing predicament;' to attempt to describe which, would be a dull much ado about a lively nothing.—The Olympic has become a place of refuge for the pedestrian performers from Astley's; the equestrians and quadrupeds having found another circus at the Surrey. The illness of poor Ducrow, brought on by over-excitement at his losses, is a melancholy addition to the disastrous results of the fire. Not to conclude with this mournful note, let us echo the clangour of the Concerts d'Été, which resounds daily as well as nightly in the "rosy bowers" of Drury Lane; where the musical metamorphosis to which the strains of Purcell and Lock, Bellini and Meyerbeer are subjected, is not inaptly typified by the transformation of Baily's Eve. The last transition is to Vauxhall, with its statues and vases, its moonlit groves and illuminated walks, its fire-works and water-works, its rope-dancing and stilt-walking, its suppering and—dancing, we were going to add, but over that we drop the curtain, or escape from it in the Nassau balloon.

ELEVENTH MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

[*From our own Correspondents.*]

FRIDAY, JULY 30.

SECTION A.—MATHEMATICAL AND PHYSICAL SCIENCE.

'Report of a Committee, consisting of Sir J. Herschel, Mr. Whewell, the Very Rev. the Dean of Ely, Professor Lloyd, and Lieut.-Col. Sabine, for the purpose of superintending the scientific co-operation of the British Association in the system of Simultaneous Observations in Terrestrial Magnetism and Meteorology.'

Your Committee, referring to their last Report (*Athen.* No. 678), for the history of the magnetic operations in progress up to the date of that report, have to state, in continuation, that the magnetic observatory at St. Helena was finished, and the instruments established, in August 1840,—at Toronto in September,—and at Van Diemen's Land in October of the same year. The observatory at the Cape of Good Hope also was completed and in activity at the commencement of March in the current year, delays having occurred in its completion, which, though productive of great uneasiness and distress to its officer in superintendence, Lieut. Eardley Wilmot, could in no way be attributed to any want of exertion, or to any negligence on his part. From each of these stations returns have been regularly received since their respective dates of completion. Previous to this, there have been received returns of seven months of observation in a temporary observatory at Toronto, and of six at St. Helena. All the observations, as soon as received, have been regularly transmitted to Prof. Lloyd, and, after examination by him, handed over to Col. Sabine, under whose superintendence, assisted by Lieut. Riddell—the state of whose health, unfortunately, has compelled his return from Toronto—their publication will take place, Government having, on the application of the Royal Society, taken upon themselves this additional expense. In consequence of this arrangement, the reduction and printing of the observations are now in progress. The portable observatories of the *Erebus* and *Terror* were put up at Kerguelen's Land, and also at Van Diemen's Land. At the former station, the May and June terms were observed—at the latter, those of August and September, 1840. During the stay of the expedition at these stations, the magnetometers were observed *hourly*; and the regular work of the observatory at the latter station, under the direction of Lieut. Kay, has been begun, and will be continued on this doubly-laborious plan of hourly intervals for the ordinary observations; while on the term days, all the three magnetometers will be observed at the same instants of time, at intervals of 2½ minutes,—the means of confronting this vast increase of labour being supplied by the Colonial Government, as administered by that ever active and zealous friend of science, Sir J. Franklin. And in addition to this, and for the sake of multiplying occasions of observing the correspondence of magnetic perturbations, with auroral discharges, one hour out of every 24—viz. from 1h. 50m. P.M. to 2h. 50m. P.M. Gottingen mean time, commencing from January 1, 1841—will be occupied with observations of the magnetometers, at 2½ minutes interval, in this order, viz. Bifilar, declination; Vertical force, declination; Bifilar, declination; V, D; B, D, &c. It is to be hoped that some of the European observatories will, at least occasionally, furnish observations in correspondence with these.

The first Report of the Director of the Madras Observatory (Lieut. Ludlow), and the first month's observations, have been received. It commenced regular observation on the 1st of January 1841.

Of the foreign European observatories, Brussels (M. Quetelet), Prague (Herr Kreil), and Milan (Sig. Carlini), have regularly forwarded the term observations for each month to the Royal Society. The Cadiz observatory has been completed in instruments, and its director, M. Montajo, has personally visited Dublin, to receive Prof. Lloyd's instructions in the process of observation. In consequence of an application made to the Belgian Government by the Royal Society, through Lord Palmerston, the establishment of the Brussels observatory has been provided with the assistance necessary to carry out the complete system of observation recommended by the Committee.

From Breslau, a letter has been received from M. Boguslawski, giving an account of the progress making in that establishment, the instruments, &c. for which, it will be recollected, were supplied by this Association. Annexed to this letter are the projected term observations for August and November, 1840, which may properly be regarded as part of this Report. In future, it will be necessary to provide expressly for the final disposal of such returns as may arrive from this quarter.

The Council of the Royal Society had devoted a sum of money from their Wollaston Donation Fund for the purchase of a set of instruments for the magnetic observatory, the erection of which at Alten, near Hammerfest, was, at the date of the last Report of this Committee, under consideration by the Norwegian Government. Some difficulties have presented themselves since, which will probably prevent, or materially modify, the accomplishment of this object, or substitute for observations at Hammerfest a series to be made at Christiania, under the direction of M. Hansteen. Be this as it may, this liberality on the part of the Royal Society was highly opportune, inasmuch as it left disposable the grant placed at the disposal of your Committee at the last meeting.

Under the head of "Observatories entirely new," your Committee have to announce the establishment of a private one at Havañah, by Drs. Belot and Jörg,—an example which, if extensively followed, will prove of the most essential service to this department of science.

The term days of May and August, 1840, have been both remarkable for the magnitude of the disturbances. Mr. Riddell has undertaken to have all the observations of these two days projected in curves, which will probably be completed and laid before the Association at this meeting.

By a letter received from M. Kupffer, dated 25th March, 1841, it appears, that the observations in the magnetic observatory at St. Petersburgh commenced on the 1st of January, and at Caterinebourg on the 10th of March. In the course of the summer, they will be commenced at Helsingfors; and at Tiflis, in all probability, during the autumn. The total number of magnetical observatories which may at present be reckoned on as brought, or about to be brought, into effective co-operation, is fifty-one.

On the 12th of November, 1840, the *Erebus* and *Terror* left Hobart Town, for their first summer's research in the Antarctic Circle, leaving Lieut. Kay, with Messrs. Dayman and Scott as his assistants, in charge of the observatory at Ross Bank. On board, and during temporary sojourns of the expedition on land or ice, the observations will be made on the same enlarged plan as at Hobart Town. Their first term will, in all probability, have been observed in November at the Auckland Islands. The first point to be determined would be, the point of maximum intensity in the southern hemisphere, the meridian of which had been indicated by the daily observations in the passage from Kerguelen's Land to Van Diemen's Land, leaving only its latitude undecided. Having accomplished this, they will proceed, as rapidly as circumstances will permit, to seek and determine the position of the point of vertical dip. The observations at sea, it should be mentioned, succeed to the fullest extent of the most sanguine expectations; so much so, that the three magnetic elements are daily observed on board, with a precision perfectly adequate to the actual demands of magnetic science.

Intimately connected with a system of simultaneous observations at central stations, is the subject of magnetic surveys of the surrounding districts. It is only by reference to such central stations as zero points, that itinerant determinations can be divested of the influence of temporary and casual magnetic derangements, and brought into comparability with the general magnetic system of the globe. It is, therefore, of the utmost importance, that every advantage should be taken of the present fortunate conjuncture to secure the *whole* benefit of the simultaneous system, and to extend it from points over districts. Itinerant observations, made on a concerted system, and precisely simultaneous with those at fixed observatories, will acquire (if accurately made) all the

value of stationary ones, becoming, *ipso facto*, and at each instant, reducible to a central station. Moreover, by this means alone can the amount of station error for each element, at the central stations themselves, be ascertained;—by which is meant, all that part of each resolved element of the magnetic force which, not being participated in by the surrounding district, must be attributed to attractions merely local and accidental. Without such surveys, executed at *some* epoch, this error cannot be even approximately fixed. If executed at this particular time, not only will it be settled with precision, but the surveys will become an independent part of the whole mass of observation, and be rendered infinitely more valuable as data for future reference, than they could possibly be, if deferred till after the conclusion of the stationary observations.

Under this impression, it is highly gratifying to your Committee to be enabled to announce, that one very important survey of this kind—that of the British possessions in North America—has, on the application of the President and Council of the Royal Society, been undertaken by Government, on a scale both liberal and satisfactory—a young, ardent, and instructed officer, Lieut. Younghusband, R.A., qualified for the work by a residence and practice in magnetic observation in the observatory at Toronto, having been added to the establishment of that observatory, with a view to this especial service, for three years, with a non-commissioned officer as his assistant, furnished with every instrumental requisite, a liberal provision for travelling expenses, and with the promise of gratuitous canoe conveyance, from the Hudson's Bay Company, in the territories belonging to them. In anticipation, moreover, of a similar magnetic survey of South Africa, though as yet no formal application for such a survey has been made, the Master-General of Ordnance has ordered a second officer of Artillery (Lieut. Clerk) to be attached to the observatory at the Cape of Good Hope.

As regards this important department of the general subject, your Committee have further to notice the magnetic survey of British Guyana, which has been undertaken by Mr. Schomburgk, one of the Commissioners appointed by Government to determine the boundaries of that province, and who, on an application to that effect on the part of the Royal Geographical Society, has been supplied by your Committee, from the funds placed at their disposal, with a transportable magnetometer (to be returned when the work is complete)—the receipt of which is acknowledged by a letter from the Secretary of that body, dated Feb. 10, 1841. Nor must your Committee pass in silence the instructions given, and the instruments supplied by Government, (in duplicate, and with complete instructions for the use of each,)—also on application from the President and Council of the Royal Society,—to the African Expedition, for the purpose of observation in the course of that expedition. From the scientific zeal which distinguishes many of the officers of that expedition,—scarcely inferior to that zeal in the cause of humanity which has led them to enter on so perilous a service,—results highly valuable to magnetic science may be expected. The transportable magnetometer being one of their instruments, observations on term days during some months, corresponding with those in Guyana, will probably be obtained, and thus localities, otherwise of high interest, and remote from any central station, will be bound together.

Mr. Caldecott, Astronomer to His Highness the Rajah of Travancore, has also declared his intention to undertake the magnetic survey of Southern India; while in the north of that empire we may expect, from the zeal and energy of Capt. Boileau, that no exertions on his part will be wanting to secure a similar advantage in that quarter.

In all such surveys, it is highly desirable that a regular and concerted system of observation should be followed, and above all things, that the condition of exact conformity to the hours of simultaneous observation should be adhered to; as well as that, if practicable, all determinations of important points, intended to be made with particular care and exactness, should be performed on the term days; which object, by the exercise of a certain degree of forethought in laying out the plan of travel, may doubtless be accomplished in the great majority of instances.

Connected with, and of importance to, the practical working of the observatories, your Committee beg leave to call attention to Prof. Lloyd's supplementary paper 'On the Mutual Action of permanent Magnets,' in which those conditions of equilibrium are investigated which it is possible to satisfy, independent of the relative forces of the magnets. In this paper, independent of the practical utility of the rules laid down for the disposal of the magnets in fixed observatories, the demonstration of the extreme minuteness of the possible amount of uncompensated error arising from mutual attraction, cannot but be regarded as highly satisfactory.

Finally, your Committee have to report on their employment of the grant of 50*l.*, placed at their disposal at the last meeting, which they have expended on the purchase of a transportable magnetometer, by Meyerstein, of Gottingen, for the Guyana survey. Some improvements, not contemplated originally, having been introduced into the construction of this instrument, its total cost, including freight, somewhat exceeded this sum, leaving a balance of 12*l.* 2*s.* against the Committee, for which it is necessary they should pray an indemnity, as well as a continuance of the grant of money placed at their disposal.

Signed, on the part of the Committee,

J. F. W. Herschel.

Col. Sabine then read the following extract of a letter, from Sir John Franklin, just received:—

Government House, Van Diemen's Land,
March 13, 1841.

James Ross was less mortified at Wilkes's discoveries than you imagine: he saw at once that he had done nothing to interfere with the great objects of his own voyage. There being a little more land seen by the Americans than had been discovered by the English, and afterwards by the French, is, in fact, a matter of little consideration, when compared with the great questions connected with magnetic science, which the voyage of Ross is especially fitted to examine into. The discovery of the magnetic pole is still an open question, and to Ross will belong the honour of it. He and all his companions left us full of hope, and we entertain every confidence of his long-tried energy and perseverance. Before you receive this letter you will doubtless have seen the observations which have been made here by Ross and Crozier, and by the officers who have been left in charge of the Observatory. The whole series, up to the close of the year, if not that for the month of January, was transmitted by a ship which sailed last month, and a more complete mass of observations was never, I will venture to say, forwarded from any observatory. They will testify stronger than any language of mine can, to the untiring zeal and application, and careful attention of Lieut. Kay, Mr. Scott and Mr. Dayman, his assistants. No change in the state of the needles, or of the atmosphere, escapes their vigilance. I have made a point of providing, to the utmost of my power, for their comfort, and shall continue to do so. I feel, indeed, the most lively interest in all these pursuits; and you will permit me, perhaps, on venturing to repeat a long-formed opinion, that atmospheric changes, and even lunar motion, possess considerable influence on the needles. I long to see an Electrometer in the Observatory:—when will one be sent out?—and I wish the Expedition had been furnished with a Self-Registering Tide Gauge. I perceive a review of Baron Wrangel's work in the *Quarterly*: I entirely concur with the writer in the desire to urge on the Government the necessity of sending out another sea expedition to try the new passage; and I trust he will be able to add another laurel to his brow by causing vessels to be equipped for that service. I do not, however, agree with his remarks respecting the secondary value of the researches which are carrying forward in this hemisphere. I am persuaded that the results of Ross's voyage, and the establishment of the various magnetic observatories, will develope more highly important matter than the most sanguine of their supporters can at present imagine. I am no theorist, but I scarcely ever examine attentively the observations now in progress here, without receiving some new idea which I have not leisure or means of working out. Believe me, &c.,

John Franklin.

Col. Sabine observed, that the connected view of the Term Observations would, no doubt, be soon brought before the Section, as well as before the Committee of Recommendations, since previous to the next meeting of the Association twelve complete Reports will, it is to be hoped, have come to hand. With reference to the resolutions passed at Glasgow, viz. "That a Committee, consisting of Major Sabine and Sir J. Herschel, be requested to provide two actinometers, for observations on the intensity of Solar Intensity, to be made by Prof. Agassiz, at considerable heights in the Alps, and that the sum of 10*l.* be placed at the disposal of the Committee for that purpose;"—"That Major Sabine be requested to provide a good mountain barometer and a thermometer, for the assistance of Mr. M'Cord in his meteorological observations—the sum of 20*l.* to be placed at the disposal of Major Sabine for the purpose"—Col. Sabine reported, that M. Agassiz had been supplied with two actinometers, at the cost of 10*l.*; and that a good mountain barometer was forwarded to Mr. M'Cord early in the spring of this year, having been previously compared with the standard barometer of the Royal Society; and that a thermometer was not sent, because Mr. Newman informed Col. Sabine that an excellent standard thermometer had been ordered by Mr. M'Cord himself, and had been forwarded to him. The cost of the mountain barometer was 6*l.* 12*s.* 6*d.*

Mr. J. Scott Russell then read a 'Notice Supplementary to the former Report on Waves.'—At the last meeting, some discussions had taken place, tending to show the value of an accurate determination of the velocity of the Great Wave of Translation in a channel of triangular section. Some other subjects, demanding additional experiment, had also occurred to him since the last meeting, and an apparatus capable of generating large waves in a large triangular channel, had been constructed. The point to be determined regarding the velocity of the great primary wave in the channel of triangular section, was this—whether the velocity were that which is due by gravity to a depth of one-fourth part of the depth of the channel, or of one-third. The difficulty of this determination arises from several causes. First of all, the wave in the triangular section had a less continuous form than in the rectangular channel; and secondly, the portion of fluid in the angle of the channel at the bottom does not acquire the same motion of translation with the remainder of the fluid in the wider parts of the channel. These causes tend to retard the motion, and to render it matter of doubt whether the actual velocity approaches nearer to that due to one-third or one-fourth of the depth. An example of the results obtained by experiment is as follows:—

The velocity due to $\frac{1}{3}$ of the depth being 6.5 feet per sec.
" $\frac{1}{4}$ " 5.7 "
The velocity observed by experiment was 6.3 "

The general conclusion being, that the velocity of the great primary wave of translation in a triangular channel is nearly that due to one-third of the depth, making allowance for the resistance of the small portion in the angle of the bottom—the result being nearer to the velocity due to one-third than to one-fourth of the depth. The next point investigated was a curious phenomenon, to which Mr. Russell had given the designation of the "great negative wave." This phenomenon was, in some respects, the counterpart of the great wave of translation. It has this curious property, that instead of being propagated across other waves, as the common oscillatory waves are, both in their positive and negative portions, this negative wave and the positive wave, when meeting, had the effect of neutralizing each other so perfectly, as altogether to leave the fluid in a state of rest, with the exception only of certain residual oscillatory waves of the second order. With this wave a number of curious phenomena were associated; and it appeared to form an important element in the resistance of fluids to the posterior portion of a ship, while the positive wave was closely associated with the resistance to the anterior part. A series of experiments had also been made on a point which had not previously been examined—the influence of the velocity of the wave on the resistance of a fluid to bodies moving with velocities remote from the velocity of the wave,—whether, when a body moves with a *given* velocity *less* than that of the wave, it will be more or less resisted, according as the velocity of the wave is more or less remote from its own; and whether, when a body moves with a *given* velocity *greater* than that of the wave, it will experience more or less resistance, according as the velocity of the wave is more or less remote from its own. The general result is, that with velocities less than that of the wave, the resistance increases in a certain manner as the velocity of the wave diminishes; and that in velocities greater than that of the wave, the resistance diminishes as the velocity of the wave diminishes. Slowness of motion of the wave, while it is least favourable to low velocities, is most favourable to high velocities; hence rectangular canals are best for low velocities, and sloping sides for high velocities.

Prof. Whewell called attention to the important bearing of these elaborate and extensive experimental examinations of the phenomena and laws of waves on many branches of science. Since he arrived at Plymouth, he had received a letter from the Astro-

nomer Royal, in which he mentions that he had commenced a theoretical examination of this important subject of waves, to which his attention had been forcibly directed, partly by Mr. Russell's experimental researches, partly by a discussion which took place in the Physical and Mathematical Section at Glasgow, in which Mr. Russell, Prof. Kelland, and the Astronomer Royal himself, took part, and partly from the importance of the entire subject, as connected with tides and navigation. One curious result had already become apparent. It was well known, that in several places, as, for instance, at some places in the Frith of Forth, three, and sometimes four, tides occur in the twenty-four hours. These, it was supposed, had their origin from two tidal waves arriving by different routes, and at different times, at the mouth of the channel, up which each propagated its own tide wave: these, though they might occasionally blend into a single wave, yet retained their separate identity so complete, that, local circumstances favouring, they were found again to separate, and thus produce those supplementary tides. Now already Mr. Airy finds that there are certain elements in the theoretical examination of waves, which promise very clearly to lead to the origin and nature of these separately identical, and yet blended waves. Prof. Whewell begged to ask Mr. Russell, whether it was true, as reported, that these curious tides in the Frith of Forth had been observed and recorded in a work printed upwards of one hundred years since?—Mr. Russell replied, that he was not himself cognizant of the fact; but that he had heard it stated, that Dr. Robinson had, in conversation, asserted it to be so. The fishermen seem to have been for a long time quite familiar with them, and had given them a name.

'Further Researches on Rain at York, by John Phillips, F.R.S., and at Harraby, near Carlisle, by Joseph Atkinson, Esq.; with Remarks by Prof. Phillips.'

At previous meetings of the Association, Mr. Phillips had laid before the Section a considerable series of experiments on the quantities of rain received on equal horizontal areas, at different heights from the ground, and presented as a general view connecting the results, that each drop of rain grows continually larger as it descends through atmospheric strata successively warmer, itself being cold enough to condense on its surface the invisible vapour of water which exists in the air. On this occasion he brought forward some recent experiments, partly his own, and partly made by Mr. Atkinson, from which it might be inferred, that in the further prosecution of this subject, and in the registration of the quantity of rain for any purpose requiring exactness, special care should be taken to choose an unexceptionable situation, and to employ gauges suitable to the object proposed. The statement made by Mr. Phillips at the Glasgow Meeting, of the diminution of the measured quantities of rain, at the small heights of 3, 6, and 12 feet above the surface, was fully borne out and confirmed by an extract from Mr. Atkinson's register for 1841. Omitting in this year the snowy month of January, we abstract the following measurements of the rain received in *funnel gauges* of the usual kind, at Carlisle, on the ground, and at 3 feet, and 6 feet above:—

	On ground.	3 feet above.	6 feet above.
February ..	1.569	1.477	1.249
March.....	2.728	2.571	2.407
April	2.587	2.576	2.429
May	2.406	2.261	2.172
June	3.300	3.405	3.243
July to 24 ..	3.136	3.064	3.032
	15.806	15.354	14.332

In contrast with this, Mr. Phillips presented the following table of measures of rain, received in *globular gauges*, (first recommended by the Rev. Dr. Robinson, at the Newcastle Meeting of the Association, in 1838,) at York, on the ground, and 3, 6, and 12 feet above. A column is also added of the quantity received in a *funnel gauge*, 3 feet above the ground:—

	Globular gauge, ground.	Funnel gauge, 3 feet.	Globular gauge, 3 feet.	Globular gauge, 6 feet.	Globular gauge, 12 feet.
April.....	.563	.309	.567	.579	.609
May	.910	.418	.910	.898	.947
June	.370	.315	.584	.575	.633
July to 11..	.862	.436	.896	.882	.926
	2.905	1.578	2.957	2.934	3.115

In this table it appears, first, that on the average the globular gauges receive nearly twice as much rain as the horizontal funnel gauge; secondly, that from the ground to a height of six feet, the quantity in those gauges seems not decidedly to vary, beyond limits which may be permitted by small errors of the instrument, or local irregularities; thirdly, that at a height of 12 feet *more rain* is received than at any of the stations nearer the ground. This singular result the author is at present disposed to view as due to a purely local cause: the situation of the gauges being such, that the lower gauges may be believed to be partly sheltered from the wind by shrubbery, and in consequence, during wind, the rain drops be supposed to fall upon them, in lines deviating less from vertical lines than on the upper gauge. The consequence of such conditions on *such gauges*, would be as the experiments indicate. Mr. Atkinson had previously begun to employ in his series one globular gauge of 12 in. diameter, at a height of 6 feet; and at this same height he had placed one horizontal funnel gauge of 12 in. diameter, another of 18 in. diameter, and a third funnel gauge of 12 in. diameter, with the opening inclined 45°, and turned constantly to face the wind. The comparative quantities received by the 12 and 18 in. horizontal, and the 12 in. inclined gauges, appear as follows:—

	Horizontal 12 inch funnel.	Horizontal 18 inch funnel.	Inclined 12 inch funnel.
1841, Jan. ..	2.364	2.129	2.668
Feb. ..	1.249	1.167	1.681
March	2.407	2.153	3.550
April ..	2.429	2.324	2.915
May ..	2.172	2.074	2.435
June ..	3.243	3.013	3.193
July ..	3.032	2.777	2.531
	16.896	15.637	18.973

Supposing the graduations employed in the registration correct, the larger gauge receives the smaller proportionate quantity of rain,—an unexpected result, which deserves confirmation. It appears also that the gauge inclined 45°, and turned to the wind, received more rain than the horizontal gauge; and that the quantity collected in the globular gauge was about intermediate between that of the 12 in. horizontal and inclined funnels. From this Mr. Atkinson imagined, that its indications were more nearly proportioned to the real quantity of rain than either of the others; but it probably did not expose a sufficient arc (it should be 270°). Having pointed out these circumstances affecting the true meaning of correctly observed rain registers, Mr. Phillips drew attention to the importance, in all these inquiries, of a knowledge of the angle of inclination of descending rain in each shower, and concluded by proposing, as a fit general form of experimental research, so far as the mere question of the *quantity* of rain falling through given sections of air at different heights, was concerned, that there should be placed in some very unexceptionably open situation, a series of gauges at different heights above the surface (0, 3, 6, 12, 24 French feet) of *three kinds* at each height, viz., an ordinary *funnel* gauge with horizontal edge; a *globular* gauge; an *azimuth and inclination* gauge, such as was described and illustrated by figures, in the account of the proceedings of the Section at Glasgow (*Athen.* No. 676). He then requested permission to inquire of Dr. Robinson, the original proposer of the globular rain gauge, what was the nature and result of the experiments he had been conducting with it, and how he found it to succeed.

Dr. Robinson first explained the character of his globular gauge. A globe of copper stands on a stem with a funnel, so as to leave exposed to the rain its upper part; the rain, as it trickles down the globe, is caught by the funnel; when the wind was high, the drops, as they collected below, were in danger of being blown off, unless the funnel extended out so as to stand under about one quadrant of the globe, thus leaving about 270° exposed. It will be readily seen, that in this way, the copper globe always presenting a nearly equal cross section to the descending rain, whether the rain drops descended in vertical lines or in lines considerably inclined to the vertical, the quantity of rain falling on a given surface would be more approximately obtained from its indications. He had this gauge fitted up on the flat roof of the Observatory at Armagh, in the close vicinity of an ordinary horizontal gauge, the mouth of which exposed exactly 100 square inches; the diameter of the globe had also been so regulated as to expose exactly an equal cross section. Except during the very violent gale of January 6th, 1839, which was altogether abnormal, he had never found the rain to be blown out of the receiving funnel of the globular gauge; he had it now set up since September 1838, and the mean result was, that the ratio of the quantity received by the globe gauge to that received by the ordinary gauge, was almost as exactly 2:1; this ratio, however, was very much departed from; on one occasion, during a very severe gale in November 1839, in which the mercury in the barometer had descended more rapidly and lower than he ever remembered to have seen it, the globular gauge had received 0.76, while not one drop had entered the horizontal gauge beside it: the curvets upon the roof, doubtless, having given rise to this remarkable circumstance, in a manner described to the Section at Newcastle by Prof. Bache, of Philadelphia. He was glad to find that the results of Prof. Phillips's observations at York were so entirely concordant with his own.—The President inquired of Dr. Robinson whether or not he had observed the probable ratio of rain received in the horizontal gauge to that in the globular gauge, to be that of the size of the angle in which the rain descended to unity.—Dr. Robinson had not been able to make any very accurate observations upon the angle in which the rain descended, for, from his near-sightedness, except he approached very close to the gauge he could not see what was taking place near it, and when he did so approach, the angle in which the rain descended was instantly affected by his proximity.—Mr. Fox observed, that there could be no doubt that local causes of disturbance did exist, which affected the quantity received by the gauge, but on the whole the results were so uniformly an increase of the quantity received at lower than at higher elevations, that he felt that the explanation given by Prof. Phillips was, speaking generally, correct, namely, that the cold drops of rain, as they descended, condensed more and more of the hygrometric moisture of the lower atmosphere upon their surfaces.—Prof. Stevelly said, that it was he who, so long ago as the meeting at Edinburgh, had ventured to dissent from the opinion advanced by Prof. Phillips; and it was in consequence of a discussion in this Section at Newcastle, in which he again stated, that, in his opinion, the cause of the increased quantity of rain received in the lower gauges was not the deposition of moisture on the rain drops in their descent, but that as they approached the earth the horizontal velocity was diminished in consequence of the obstructions near the surface, and thus they entered the gauge in lines more vertical. It was to test the accuracy of this, that Dr. Robinson suggested the use of the globular gauge, and Mr. Stevelly conceived that the comparisons of the quantities of rain received in these two different kinds of gauges to a certain extent confirmed that opinion. But unquestionably it would be desirable to test both opinions by still more decisive experiments; also by taking the temperature of the rain as it fell at higher and lower stations.—Prof. Phillips, in reply, stated his reluctance to enter into any discussion as to the speculation by which, on a former occasion, he had endeavoured to connect and calculate the results. Having received no new data of importance he could neither defend nor abandon it, but would still urge the utility of settling, by adequate experiments, this long disputed question in Meteorology. To be *adequate*, such experiments should include numerical determinations of all the influential and variable circumstances in the atmospheric strata through which the rain falls; the temperature of the air, the point of condensation of moisture, and the temperature of the rain drops, and the ratio of rain received at the beginning, in the middle, and at the end of a shower, and the hour of the day or night when the rain falls. The actual size of rain drops may, perhaps, be determined by direct experiment; if *successful*, such a train of experimental research, at moderate heights, might furnish data for a complete solution of the particular problem, and such a mathematical solution, besides giving a history of a rain drop, from the origin to the termination of its descent, would reveal many circumstances regarding the conditions of the atmospheric strata through which

it passed, which it was most desirable, but very difficult, to obtain.—Prof. Stevelly observed, that the quantity of latent heat developed by the deposited vapour would so rapidly heat up the drop of rain, that the quantity within the range of the distances of Prof. Phillips's gauges, could not account for the very decided difference of amount of water received. As to estimating the size of the drops, a simple method was, to stretch a piece of bibulous paper over glass, note its weight accurately, expose it for a few seconds to the falling rain, after which the number of drops which fell could easily be counted, and the weight of all of them ascertained, from which the mean diameter of one of the drops could be readily calculated. The evaporation would be found to be very trifling.—Dr. Fowler, of Salisbury, observed, that evaporation could be prevented effectually, by receiving the rain in a vessel containing a little oil, as he accidentally discovered while trying some galvanic experiments on frogs, whose legs he had immersed in oil.—Dr. Robinson observed, that these researches would be much aided by the valuable addition made to our power of experimenting by the complete solution of the problem of the wet bulb hygrometer, by Dr. Apjohn. His own experience fully confirmed the extreme accuracy of Dr. Apjohn's formula. The value of Mr. Phillips's experiments were great, first, in a scientific point of view, but secondly, in a moral point, for we have had a remarkable example of the ennobling effect of a true love of science. Mr. Phillips had advanced an ingenious explanation of an extraordinary phenomenon; and although the children of our mental adoption are well known to be only less dear to us than our actual children, yet, here was this gentleman, when a doubt was entertained of the soundness of his opinion, not only undertaking a laborious train of research to test the correctness of his views, but actually bringing them fairly and fully forward when they seemed to tell against him. But why should it be said against him, when it was truth he sought for? and in the search of that, a negative experiment, or one which tells a tale opposite to that we expect, equally informs, though it may not be equally grateful at the moment. But to the true philosopher it was equally acceptable.

'On the Influence of Mountains on Temperature in the Winter in certain parts of the Northern Hemisphere,' by T. Hopkins.

It was stated by Mr. Hopkins, that between the latitudes of 40° and 70° north, there is in the same parallels a great difference of temperature, particularly in the winter, amounting in some cases to as much as 40° or even 50° of Fahrenheit. The western coasts of the two continents are much warmer than the eastern, and the winds generally blow from the sea to the western coasts; and it has been inferred that the prevailing winds passing over sea to the western coasts, and over land to the eastern, was the cause of the difference in the temperature. This inference is not, however, in accordance with facts, as the low temperature is not proportional to the distance from the western coast. Throughout this part of the northern hemisphere, it is found that climate has certain relations to the elevation of land, not simply arising out of the elevation of that part of the earth's surface above the general level, but out of the influence which the elevation exercises on the atmosphere. [Here a diagram was exhibited, illustrating Hadley's theory of the atmospheric currents.] This theory represents the tropical atmosphere as rising and flowing over at the top towards the polar regions, and returning when cooled, flowing along on the surface of the earth. This inequality of temperature in the atmosphere would cause an upper current to flow north, and an under current to flow south. But the unequal velocities of the different parts of the earth's surface, from the equator to the pole, modifies the course of these currents, and makes the upper a south-west, and the lower a north-east current, as shown by lines on a Mercator's Chart. This theory, true in its leading principles, does not account for what occurs on the earth's surface, because it does not take in all the causes that are in operation; which causes materially modify the general results. The polar current, in flowing from the north-eastern part towards the south-west, meets with elevations of the land, and is, consequently, along a diagonal stripe in the direction of the general currents, obstructed in its progress, and sometimes stopped, and obliged to turn back, as an upper current, towards the pole: while beyond the obstruction nearer to the equator, the tropical or upper current, not being met by a polar current along this line, flows towards the obstruction, from whence it returns, partially cooled, as an under current. The consequence is, that along such a stripe, the great atmospherical currents, instead of proceeding from the equator to the pole, and back again, go on the north side from the pole to the obstruction, and back to the pole; while, on the south side, the flow is from the equator towards the obstruction, and back again towards the equator, leaving the obstruction a dividing line marking great difference of climate in the winter season. In the New World a ridge of mountains extends from Mexico by the Rocky Mountains, some of which are stated to be 25,000 feet high, to the Frozen Ocean. This ridge crosses the diagonal line of the great atmospherical currents, and constitutes such an obstruction as that described. In the Old World a number of similar ridges extend from the southern point of the Himalaya Mountains to the Swiss Alps, including the range of the Himalaya, Hindoo Koosh, Central Asia, Armenia, Circassia, the Carpathian Mountains, and the Illyrian and Swiss Alps; and the climates found to the north-east of these chains are materially different from those which exist to the south-west. The greatest difference in climate in those parts is found in the beginning of winter, and is, it is presumed, caused by the different quantities of atmospheric steam condensed in the respective parts. In the tropical seas, a quantity of steam exists in the atmosphere, sufficient to give a dew point of 80°, making the steam 1-48th part of the whole atmosphere. This steam, if all condensed into water, would give a depth of about nine inches. The steam is regularly carried, in the autumn and the beginning of the winter, when the northern hemisphere is cooled down, from the tropical regions in a north-east direction towards the polar regions, or towards some obstructing elevation of the land, and is, to a great extent, condensed: and it is to the condensation of this steam that we are to look for the great difference of winter climate in the same latitudes of the northern hemisphere. The steam in the tropical regions of the Pacific Ocean that flows towards the north-east, with the south and south-west winds that prevail in those parts, is carried to the American ridge, and is there condensed. The result is, that the south-west side of this chain of mountains is wet and warm in the winter, from the tropics to Nootka Sound, and still farther north. Capt. Cook, Lewis and Clarke, Capt. B. Hall, and Humboldt, describe the climate of this part in such way as can leave no doubt of the fact. But beyond this ridge, to the north-east, we have a different climate in the winter, it being as remarkable for being cold and dry, as the other side is for being wet and warm. Capt. Parry, Capt. Back, and Lewis and Clarke, represent the country in the winter, from the shores of the Frozen Sea to the Missouri, as very cold and generally dry. Here we trace the effect of the condensation of steam, and of its absence, on the climates of the different parts. In the Old World the same causes produce the same effects. On the south-west sides of the various ridges of mountains, the weather is in the autumn and early part of winter, very wet and warm for the latitudes. This is particularly seen in Hindostan and the south-west coast of Italy; while to the north-east of these mountains the climate is cold and dry, extending over Poland, Russia, Central Asia, and Siberia. The very heavy rains which fall to the south of the Himalaya Mountains indicate the great condensation of steam that takes place in that part of the world; and the effect produced on the climate is remarkable. The valleys are habitable to a great elevation, and Major Archer states, that wheat is grown at a height of 13,000 feet, in lat. 32° north; whilst Humboldt represents 1,300 feet as the greatest height at which wheat can be grown in Teneriffe, a place 4° more south. But when the steam that is in the atmosphere is all, or nearly all, condensed against the sides of elevated ridges, it is evident that it cannot carry its warming influence farther north. Hence the part of the globe between these ridges and the polar regions will, in the autumn and winter, be dry and very cold. In order to reason on the causes of the difference of winter climates in these latitudes, let it be supposed that the present Asiatic mountains were removed further north.—say to Northern Siberia. Then, as there would be no longer elevated land to intercept and condense the steam, where it is now condensed, it would flow farther north, towards Siberia, and be there condensed, and it would render that country, now so dry and cold in the winter, wet and warm. The British Islands are now made warm in the autumn and the beginning of winter by the steam that is brought from the tropical regions. But suppose a lofty ridge of mountains to extend from the Canary Islands to New York, and the effect would be, that the steam now brought north to more than 50° of latitude, would be condensed 10° to 15° more south, and the British Islands would be as cold in the winter as the same latitudes are at present in Asia and America. That the relative situations of land and water are not the cause of the great difference of climate, may be shown by supposing an alteration in certain parts of the earth's surface. Were Central Asia to become sea instead of land, that circumstance would not prevent the present mountains from condensing the tropical steam, as they now do, and consequently would not prevent that degree of cold and dryness which results from the interception of that steam in those parts, though they would be then sea instead of land. In like manner, suppose a belt of low level land to extend from Spain across to Davis's Straits, which is now sea; and it will be perceived that this part being land instead of sea, would not, in the summer and autumn, prevent the tropical steam from flowing to the British Islands. It would not be until winter had cooled down this supposed land, below the temperature of the present sea, that any greater condensation of tropical steam would take place south of the British Islands. From these various considerations, we are warranted in coming to the conclusion that the great difference in the winter climates of certain parts of the Northern Hemisphere, is attributable to elevations of land intercepting and condensing atmospheric steam, and thus rendering those parts wet and warm, while cutting off the supply from more northern parts, leaves those parts dry and cold.

Section B.—CHEMISTRY AND MINERALOGY.

'On some Instances of Restrained Chemical Action,' by E. A. Parnell.

The object of this paper is to add to the list of circumstances which modify or prevent the action of chemical affinity, in a force exerted by the presence of water in the sphere of decomposition, producing a force of considerable power, and one whose action has not been hitherto recognized. Its existence has been traced by observing the want of action of certain gases, and especially sulphuretted hydrogen, when in a perfectly dry state, on substances on which they exert a vigorous action in the presence of water. Thus, papers impregnated with salts of lead, mercury, and copper, were preserved from the action of sulphuretted-hydrogen, if rendered absolutely dry. That the effect of water in permitting action between these same bodies, does not wholly depend on diminution of the force of cohesion, by dissolving either the gas or the salt, is proved by several circumstances:—1st, this want of action is perceived only on particular salts; 2nd, to restore the action, water may be present in a state of combination with the salt, and can then exert no solvent power; 3rd, on moistening different dry salts with absolute alcohol, which dissolves six times its volume of sulphuretted hydrogen, and exposing to the gas, still no action ensued. On considering the nature of the salts on which the action of sulphuretted hydrogen is restrained, it appears that the function of water in permitting action, is to combine with the acid, which should be rendered free by sulphuretted hydrogen, immediately on its liberation. One equivalent of water is not in every case sufficient to satisfy the acid, for all anhydrous salts of the oxides of mercury, copper, or lead, can produce one equivalent of water with sulphuretted hydrogen. The action of water may in some measure be assimilated to that between sulphuric acid of different degrees of strength and metallic iron or zinc. These metals, as is well known, undergo no change in oil of vitriol, while in this case, as well as when dry sulphate of lead is exposed to dry sulphuretted hydrogen, it would be said all is necessary to produce decomposition. But

in both cases water must be added for action to ensue; in the one to unite with the sulphate of zinc about to be formed, and in the other with the sulphuric acid. But there are some salts of those metals which are unacted on by sulphuretted hydrogen when dry, whose acid or hydracid of its salt-radical possesses but little affinity for water, and to which, consequently, this explanation will not apply. In considering the cause of the want of action here, it must be remembered that sulphur is in reality a weak radical; that if the salt be soluble, a force is called into action when its solution is acted on by sulphuretted hydrogen, which possesses great power over the results of chemical action, namely, insolubility of the sulphuret; and water being present with which the acid can unite when free, it does not follow that decomposition must occur in one case because it will in another under the influence of other forces. The author concludes by suggesting an explanation of the singular action between potash and carbonate of lime, in presence of a small quantity of water, observed by Prof. Liebig,—carbonate of potash and caustic lime being formed. Both caustic potash and carbonate of potash have a strong affinity for water, but of the two, caustic potash the greater; here is sufficient water to supply the demands of the carbonate, but not of caustic potash; the result is, carbonate of potash and caustic lime are formed.

'On some Subjects connected with the Sulphocyanides,' by E. A. Parnell.

The author referred to a paper published in the *Philosophical Magazine* for October, 1840, in which it was shown that the substance supposed to be the isolated radical of the sulphocyanides (obtained by the action of chlorine or nitric acid on sulphocyanide of potassium), contained hydrogen as an essential constituent, and could not therefore be regarded as that radical. The present communication consists, first, in an investigation of the evidence on which this body acquired its character as the radical; secondly, an examination of other reputed sources of this substance; thirdly, of the action of iodine on sulphocyanide of potassium; and lastly, some theoretical considerations on the constitution of the sulphocyanides. Should the views advanced by Mr. Parnell, as to the constitution of sulphocyanogen, prove correct, it must be viewed as a hexabasic radical, in whose salts each atom of the base must always be of the same name.

'On Manures, considered as Stimulants to Vegetation,' by Prof. Daubeny.

In this paper the author discussed the question as to the sense in which manures can be considered to act as stimulants to plants. It is evident, that if the term stimulus be understood in an acceptation similar to that in which it is employed with reference to the animal economy, it ought to be confined to bodies which, by their presence, assist in promoting the secretion and assimilation of the nutritious materials present, and ought not to include such as themselves afford materials for secretion. Thus, salt and other condiments do not themselves nourish the animal, but, by their presence, induce its secreting surfaces to assimilate more readily the substances presented to them. Now it becomes a fit subject for inquiry, whether manures operate in the former manner or in the latter; and likewise whether the fact, that certain of them act less beneficially at subsequent periods of their application than they did at first, admits of being explained on the recognized principle "that stimuli lose their full effect upon living matter when frequently repeated." Dr. Daubeny adduced several facts, which led to the inference that the nitrates of soda and of potass operate favourably upon certain crops by communicating to them nitrogen; and that the reason why these salts sometimes have appeared to leave the land in a worse condition than before their use, is not owing to their being stimuli, and therefore amenable to the law above quoted, but is because the free supply of nitrogen afforded by the decomposition of the nitrates, had caused the plant to absorb a larger portion of those other ingredients, such as phosphate of lime, silicate of potass, &c. which are present only in a limited quantity in the soil, thus tending to exhaust it of these materials, and causing thereby an inferior crop to be produced on the following year. Now, though it may be true that the nitrates in this manner indirectly stimulate the vital energies of the plant, yet it was conceived that the term stimulus had better be abandoned with reference to such cases, as its adoption might lead to an erroneous impression in the mind of the farmer with respect to the proper mode of restoring to the land its original fertility. If the theory suggested by the author be the true one, it will follow, that the proper remedy would be, not to discontinue the use of the nitrates, but by the application of bone manure, &c. at intermediate periods, to restore to the land those other ingredients which had been abstracted from it in too large a quantity. To determine what materials are wanting, and in what proportions they ought to be applied (independently of the empirical plan of ascertaining, by repeated trials, the substances which, by their addition, succeed best in remedying the deficiency) two methods present themselves. The first, a difficult one, is to learn, by a minute analysis of the soil, whether the ingredients which the crop requires are actually present, and to add of these a quantity equal to that which the intended crop is calculated to contain. The second—a more practical scheme—is to estimate in the first place how much of these substances exists in the crop taken off the ground, and then to add to it at least an equivalent quantity in the shape of manure. The Professor suggested, that a kind of book-keeping should be undertaken in farming establishments on this principle, a debtor and creditor account being made out of the quantity of nitrogen, of earthy phosphates, of alkali, &c. abstracted in the form of crop, and restored in that of manure each year, and concluded by specifying certain points relative to this subject which require further investigation. 1st. To confirm or disprove his theory, with respect to the operation of the nitrates, by determining whether they actually diminish in quantity, and finally disappear after several successive crops have been grown upon land impregnated with these salts. 2ndly. Whether the same applies to common salt and other mineral manures as to the nitrates, or whether any of them act directly as stimuli. 3rdly. More extended and exact data relative to the amount of alkaline and earthy salts, and of nitrogen present in the various crops cultivated by the farmer, as well as in the manures he employs.

'On the direct formation of Cyanogen, from its elements.'—Mr. G. Fownes, after referring to the experiments of Desfosses, which went to show that gaseous nitrogen brought into contact with charcoal at a high temperature, an alkali being present, is absorbed in notable quantity, and a corresponding amount of cyanide produced; and also to the process for manufacturing Prussian blue, by Lewis Thompson, in which nitrogen is derived from the atmosphere—proceeded to show that the existence of nitrogen in a solid state, in many varieties of charcoal, and the possible presence of ammonia in the nitrogen gas employed, were sources of error against which it was necessary to guard. The author uniformly found, that whenever wood, charcoal, or coke, is ignited in a close crucible with carbonate of potash, at a moderate red heat, cyanide in abundance is always produced, which is never the case with pure charcoal, provided the temperature does not exceed redness. After some preliminary trials, a mixture of fifty grains of pure sugar charcoal, and fifty grains of carbonate of potash, obtained by gently igniting pure bicarbonate, was placed in a porcelain tube fixed across a furnace and maintained at a full red heat, while pure nitrogen gas, very carefully prepared by acting on solution of ammonia by chlorine, was slowly passed over the mixture. At the further extremity of the porcelain tube, a small gas-delivering tube was arranged, dipping into a vessel of water. At the commencement, the quantity of gas emitted by the exit end of the arrangement greatly exceeded that passed into the tube:—it had no odour, did not render lime-water turbid, and burned with a bright blue flame, generating carbonic acid. After some time the carbonic oxide diminished in quantity, until at length nitrogen alone escaped. The tube, when cold, being examined, was found to contain a black porous mass, which hissed and became very hot on the addition of water. A little of the filtered solution gave, by "Scheele's Test," abundance of Prussian blue; another small portion, acidulated with nitric acid, gave a copious white precipitate with nitrate of silver, and the residue distilled with dilute sulphuric acid (the addition of which scarcely occasioned effervescence) afforded about half an ounce of tolerably strong hydrocyanic acid. Arrangements were made for repeating the experiment, employing the nitrogen of the atmosphere in place of that artificially prepared, the result of which was, as before, a black mass, rich in cyanide of potassium. The amount of carbonate of potash converted into cyanide by direct absorption of nitrogen, appears to depend very much on the temperature employed. In two trials at a full red heat, the quantity of carbonate converted amounted to 11.5 and 12.5 per cent. of that employed. When, however, the temperature was raised to whiteness, much above the melting point of copper, the production of cyanide appeared much greater. When carbonate of soda was substituted for the potash salt, cyanide was generated, but it seemed with much greater difficulty. The fact, therefore, appears to Mr. Fownes to be established, that free nitrogen can at a high temperature combine directly with carbon, provided some metal, or similar body, be present whose cyanide is permanent under such circumstances.

Dr. Daubeny made a few remarks on the illustration which the facts mentioned by Mr. Fownes afforded of the process by which nitrogen entered into combination with carbon in manure, and also on the probable formation of ammonia in the earth under high pressure.

Section C.—Geology and Physical Geography.

'On the Post-Tertiary Formations of Cornwall and Devon,' by Mr. Bartlett.

Mr. Bartlett detailed the circumstances under which these formations are found in Devon and Cornwall, consisting of raised beaches, drifted deposits in caverns, and fissures in lime rocks, and of submarine forests. Mr. Bartlett mentioned, in addition to the caves hitherto described, one named Ash Hole, in Berryhead; it was 30 yards long, and six broad, and on the materials filling the cave was four feet of loam and earth, containing landshells of the genera Helix and Cyclostoma; also marine shells, such as the Mytilus of the coast; bones of the domestic fowl, and human bones, mixed with pottery and various implements: below these were found abundant remains of the elephant, and the usual cavern debris. In the lacustrine deposits he mentioned, as of usual occurrence, the remains of oak, ash, elm, willow, maple, &c., and of ferns and Zostera. These he considered as belonging to a later epoch than the cavern animals, which could hardly have existed at the same time with vegetation resembling that of the present day. He then described some of the usual characters of the raised beaches, which vary in elevation from 25 to 35 feet above sea level, and consist of terraces of fine yellow siliceous sand containing pebbles of chert, limestone, old red sandstone, greenstone, hæmatitic iron ore, &c.; together with abundance of shells,—*Purpura lapillus*, Patella, Turbo, Nassa, Ostrea, &c., with remains of Echinodermata, Sepiadæ, and rarely of Gorgoniæ. These phenomena, indicating changes in the relative level of land and sea, the author attributed to galvanic action exerting itself along peculiar lines of geographical range,—such as the bottom of the British Channel, which had always been oscillating, from the earliest tertiary era.

Mr. Austen adverted to the different accounts which had been given of the raised beaches, submarine forests, &c. on the coasts of Cornwall and Devon. The raised beaches on the coasts of Cornwall were first described and figured by Borlase: in 1819, Mr. Hennah pointed out to Mr. De la Beche those beneath the citadel of Plymouth, who considered that they sufficiently proved the relative change of level of the cliffs and sea. Prof. Sedgwick and Mr. Murchison had described raised beaches in the north of Devon; and Mr. Austen had himself described these very raised beaches at Hope's Nose and the Thatcher in 1834, which were the subject of Mr. Bartlett's communication, and which, he thought, contained more species of shells than detailed in Mr. Bartlett's paper. Near St. Agnes' Beacon similar deposits occurred at an elevation of 300 or 400 feet. The submarine forest of Tor Bay, containing remains of deer, &c., has been well known since the time of Leland, who says the fishermen often bring up in their nets horns of deer, and states it to have been the

prevalent notion in his time that Tor Bay had been forest ground. Mr. Austen then described the usual appearance of the valleys and river courses of Devon: in those of the Teign and Dart are extensive lacustrine deposits, which are now cultivated fields; and at Holne Bridge are deposits of sand and granite boulders from Dartmoor, such as are now forming in the bed of the river, but at an elevation of forty or fifty feet above the bridge; at Staverton are similar accumulations covering considerable areas, and Mr. Austen inferred, from the whole evidence, not an elevation simply of the coast, but a rise in level over the whole country; and, from the occurrence of rolled fragments of hæmatitic iron ore in the raised beach in Tor Bay, that the lodes worked in that neighbourhood were older than the formation of the beach. Mr. Austen then compared the lists of shells, &c. from the raised beaches with the Fauna of the existing coast. Forty species of existing shells which he has collected are, as concern Great Britain, peculiar to these coasts, and have a more southern character than any others found on the British shores. The stony corals, such as the *Caryophyllia Smithii*, are also peculiar to this coast, and, with others undescribed, strongly resemble forms common in the Mediterranean; in Mount's Bay and Tor Bay these are so common, that scarcely a pebble is thrown up on the beach which does not bear traces of their attachment. Mr. Yarrell has also noticed, that of the British fishes *forty* species are peculiar to this coast, seldom ranging beyond West Bay. Now in the raised beaches not a specimen has been found of any of these corals or shells, characteristic of the present coast and climate, but on the contrary, the prevailing forms are both few in number, and such as are common on all our coasts. The *Cyprina Islandica*, and others which are frequent in these raised beaches, are Arctic shells. This fact agrees with the observations lately made upon the elevated beds of Arctic shells in the basin of the Clyde and elsewhere in Scotland, with similar observations in America, and also in the Mediterranean, where the raised deposits at St. Hospice, &c. do not contain all those species characteristic of warm climates which now inhabit those seas. Mr. Austen did not infer that these deposits were actually synchronous, but they were all formed in the same geological epoch, and all indicated a lower temperature than obtains at the present time. —Prof. Sedgwick noticed some of the circumstances connected with the first discovery of raised beaches, and stated that he had found frequent indications of a rise in the level of the cliffs in their water-worn appearance, at thirty or forty feet above the billows; and by paying attention to the occurrence of this circumstance on the projecting points, traces of raised beaches might be found in the adjoining hollows at the same elevation. He considered the absence in the raised beaches of the shells characteristic of the present temperature of the sea on the coasts of Devon and Cornwall, as described by Mr. Austen, like that derived from the shells in the post-tertiary deposits of Scotland, as indicative of a much lower temperature than the present.—Dr. Buckland described the general appearance and character of the caverns in the neighbourhood of Torquay, the mode of their formation, and the way in which the bones had been accumulated in them. In the case described by Mr. Bartlett, remains had been found, in successive beds, of the elephant, rhinoceros, and wolf. The skull of the red deer, and horns of the roebuck, and human remains, also under the stalagmite, but not at all mineralized. He then referred to the accumulating evidence of change of climate, since the animals found in these caves required a tropical temperature, and there were proofs of still higher temperature in preceding geological periods. The extinction of these races seems to have been caused by the diminution of temperature which followed,—a diminution of which there is proof in the beds of Arctic shells in Scotland, and many other parts; and subsequently of a more intense cold, which froze up the whole country, and covered the northern parts of Britain and other regions with snows and glaciers, the melting of which, when the climate ameliorated, produced the great flows of water from the north which has covered the country with deposits of drift. The glaciers do not seem to have extended so far south as Devon; for, in a recent excursion to Dartmoor, he had searched in vain for those characteristic phenomena so conspicuous in Scotland.—Mr. Lyte described the situation and condition of Ash Hole, forming part of the subject of Mr. Bartlett's memoir. The first opening discovered was nearly perpendicular, and the cave so filled up by debris, which had rolled in to the depth of twenty feet, that Mr. Lyte was compelled to make another entrance through the face of the cliff. By this cutting the debris was removed, and a complete section obtained of the beds at the bottom of the cavern. The order of position was as follows:—Debris, with bones of deer, human remains, and Roman pottery, 20 feet; Stalagmite, varying in thickness from 6 inches to 1½ foot; and beneath this a bed containing bones of deer, elephant, hyæna, &c., 40 feet of which had been cut through without reaching the bottom. Amongst the indications of raised beaches observed by Mr. Lyte, one of the best was the tubes of an annelid, (resembling Sabella), which can only exist within reach of the tide. He also mentioned that in cutting a canal through the shore at Tor Abbey sands, beds of peat, containing timber and vegetables, were discovered alternating with gravel.—Mr. Austen observed, that the occurrence of human remains and works of art associated with the elephant and other bones at Ash Hole, confirmed the opinion he entertained of their contemporaneity. At Kent's Hole, near Torquay, arrows and knives of flint, with human bones, in the same condition as the elephant and other bones, were found in an undisturbed bed of clay, covered by nine feet of stalagmite. In the Mediterranean, also, at St. Hospice, coarse pottery, and in Sardinia the earthenware weights used by fishermen to sink their nets, affording some indication of a primitive state of society, were found in the raised beaches.—Dr. Buckland contended that human remains had never been found under such circumstances as to prove their contemporaneous existence with the hyænas and bears of the caverns. In Kent's Hole the Celtic knives and human bones were found in holes *dug by art*, and which had disturbed the floor of the cave and the bones below it. In the cave at Swansea human remains were also found, and it was evident the cave had been used as a place of sepulture. He considered the occurrence of human remains in caves no greater proof of their equal antiquity with the other bones, than in the churchyards of Dorchester and Oxford, where they are often dug up together with the bones and grinders of the elephant.—Mr. De la Beche proposed to account for the occurrence of submarine forests below cliffs, by supposing a slight elevation, the amount of a single tide. The elevation would produce an extensive district of dry land, protected against the sea by a range of banks formed of the mud and silt of estuaries, forming circumstances favourable to the rapid growth of wood, which would grow upon the very banks. A subsequent depression to an equal extent with the elevation, would bury them all with sand and shingle.

'An Account of the Fossil Organic Remains of the South-east Coast of Cornwall, and of Bodmin and Menheniott,' by C. W. Peach.

The line of coast examined commences at Veryan, four miles south of Tregony, and extends eastward by Gorran, the Blackhead, and Fowey, to East Looe. The cliffs are composed throughout of quartzose and slaty rocks, hitherto supposed by Mr. Conybeare and others, who have referred to them in their writings, to be destitute of fossils. But along the whole line Mr. Peach has detected traces of Brachiopodous shells and corals, and the stems of Encrinites are of frequent occurrence. From Veryan to Gorran the quartzose rocks rarely contain traces of shells, but in the calcareous slates in contact with dykes of greenstones at Blackhead, remains of corals resembling Turbinolopsis, and of the genera Cyathocrinus, Spirifera, and Orthoceras occur. Eastward, at Pridmouth, a fine specimen of the Platycrinite was found, with the column, pelvis, arms, &c. In the slate quarries of Fowey, remains supposed to be those of fish, and corals of the genus Favosites were detected. Near Polman encrinital stems nearly a foot long occur, together with remains of Trilobites, corals of the genera Cyathophyllum and Favosites, Spirifers, Orthoceras, and a fossil with structure resembling that of the Sepiadæ. At Pentlooe an equal-valved bivalve, resembling Uncula, and a species of Orthis, have been found, and at East Looe another fine specimen of an encrinite, with column, arms, and tentacula attached; also specimens of Cyathocrinus, Fenestella, Turbinolopsis (Petraia, Munster), and Orthis. At Bodmin the author had detected encrinites in the slate quarries, and in those of Menheniott in Liskeard, the eye of a trilobite in good preservation. On the beach below the cliffs at Port Mellin, near Mevagissey, the author observed traces of a lacustrine deposit, containing roots and branches of trees, and the elytra of beetles, exposed after a heavy gale.

Prof. Sedgwick directed attention to the importance of tracing fossilliferous rocks by the beds with which they are in contact, in districts where the continuity of a deposit is often interrupted, or where intervals occur in which beds cease to contain fossils.—Prof. Phillips stated the progress which had been made in ascertaining and publishing the fossils of Cornwall and Devon: except Mr. Hennah's account, published in 1824, no list of these fossils appeared till last year, when Mr. Lonsdale published his in the Transactions of the Geological Society, derived chiefly from the examination of species in the collections of Mr. Hennah and Mr. Austen. The same volume contained another list of 128 species, the result of the labours of Prof. Sedgwick and Mr. Murchison. 275 distinct and recognizable forms are now known, and are all figured in a work which Mr. Phillips has just published. In the collection made by Mr. Peach are several new and interesting fossils, particularly the specimens of Platycrinites and Pentremites, which in England had not hitherto been found in rocks below the mountain limestone, but were found by Messrs. Sedgwick and Murchison in those of the Eifel. Mr. Phillips concluded with some general remarks upon the influence of local conditions upon the distribution of fossils,—the predominance of Brachiopoda in the older formations being in the proportion of 250 to 1,000 of the other mollusca,—and upon the groups of fossils characterizing other large masses of rocks.—The Rev. David Williams described the old slates of North Devon as containing a much greater number of fossils than those of Cornwall, especially Trilobites, of which he had collected fifty specimens in the last year.

A letter was read from Mr. T. B. Jordan, of the Museum of Economic Geology, 'On Copying Fossils by a Galvanic Deposit.'—[Specimens of the electrotype copies of Trilobites and other fossils were exhibited.]—In applying the method ordinarily used in electrotyping, some difficulty was experienced by the author, in consequence of the irregular form of the fossils, parts of which would not relieve from the wax or plaster matrix in which the copper is afterwards deposited. Mr. Jordan therefore adopted a compound of glue and treacle (used by printers for their inking-rollers) as the material of the moulds, the elasticity of which admitted of its leaving the adherent portions without breaking. The mixture is applied hot, and allowed to harden for twenty-four hours, when it will come off without injuring the finest parts. The matrix thus prepared requires a strong varnish to protect the back and sides from the action of the liquid in which it is to be placed, and only one copy can be made from each matrix, but the impressions have none of the defects so apparent in those produced in the ordinary moulds. Different lights and shades may be given to the copper impressions, by a galvanic process, which the author considers capable of improvement, and application to other purposes. For a dark object on a light ground the surface is brushed over with the argento-cyanide of potassium, giving it a silver face, which may be removed to the desired extent from the portions requiring to be dark, by a dilute solution of nitro-muriate of platina. Other tints may be produced by using a solution of gold; and all may be considerably varied by changing the time during which each solution is allowed to act.

'On the Stratified and Unstratified Volcanic Products in the neighbourhood of Plymouth,' by the Rev. D. Williams.

Mr. Williams stated, that the prevalent association over the different regions of the earth, of granite, gneiss, greenstones, porphyries, mica-, talc-, chlorite-, and clay-slate, had for some time past induced him to suspect that such common assemblage was not without its signification—recent observations in Devon and Cornwall had convinced him, that there existed an intelligible relationship in the community of their origin, viz. that they were all volcanic products. He would instance, first, the granite veins in

the bed of the Erme river, above Ivy Bridge, of which he exhibited a horizontal section. He at first regarded them as veins which had been injected into the yielding joints and fissures of the fine jaspery grit rock; closer inspection showed him also certain very delicate threads of the same flesh-coloured granite, emanating from the larger joints, but ranging after the planes of deposition of the grit; and the jasper rock was no more dislocated there than elsewhere. Higher up the river bed he came to what appeared a hard junction between the grit and the granite—the former was in a highly metamorphic condition, but its upper surface showed frequently that its laminæ of deposition had not been obliterated. Specimens of the altered rock, obtained from the immediate confines of the hard junction line, showed no mineral transition between the granite and the altered grit. He had observed below, that while the grit showed no evidence whatever of having been acted on by any unusual violence, most of the granite veins ranged in the direction of its normal joints. Almost the first specimen he obtained from one of these joints, (upwards of four feet above the granite in mass,) showed its walls to be perfectly granitified, the granitic matter shading out laterally in the most delicate pencillings, while nearly all the other joints afforded the same evidences of conversion, in a greater or less degree. From these facts Mr. Williams felt constrained to deny that the granite had ever been forcibly injected, and to maintain that the entire phenomena might be better explained by tranquil fusion and conversion. He contended that the pre-existing sedimentary rock had been reduced and converted into granite, by intense heat from within, traversing the joint lines in their several directions, and radiating from them laterally among the laminæ of deposition, apparently indicating, that wherever the temperature amounted to its point of fusion, there the rock would be reduced to the same condition with the incandescent mass below. With regard to the elvans or greenstones, and the so-called clay-slate, or killas, he considered that abundant evidence existed in Devon and Cornwall to show, they also were volcanic products, the former in its usual amorphous type, the latter in a stratified condition. On the shore of the Padstow estuary, west of Wadebridge, fourteen of these elvans might be observed at varying intervals, each one underlaid and overlaid by volcanic breccia, grit, ash and clay-slate—these greenstones all observed the same angle of dip, and precisely the same strike as the killas above and below them; indeed several of them are disclosed on the opposite side of the river, in the precise places which the direction of strike would have indicated, and there also tilted up at the same angle with the clay slates above and below. This line of low cliff extends about a mile, the slates and elvans having a permanent southern dip, with one undulating exception. There, fourteen submarine lava-streams occupy perfectly distinct levels in the vertical scale, each one representing its own period of occupation, during a greater or less interval of time, and each one apparently preceded or accompanied by ejected fragmentary matter—by grit, ashes and mud, the greenstones being very commonly based upon a grit or breccia, at other times upon an ash or slate, each of them appearing to pass insensibly into the other. Mr. Williams particularly directed attention to the coast round Saltash, in the immediate vicinity of Plymouth, or from Redding Point to the great mass of porphyry near the fishing houses, which was one uninterrupted series of varieties of volcanic ash, oftentimes passing into clay-slate, interstratified among the thick red sandstone beds seen on the east and west cliffs of the sound. The lower beds of this sandstone Mr. Williams observed to be traversed by four north and south dykes, which cut the beds at right angles, and filled with the same rejectamenta that he had observed to constitute the partings between the sandstone beds; these he supposes may have been the vomitories through which ashes were blown out, as it was an interesting fact, that these ash dykes did not traverse the more southern beds, but were overlaid and concealed by them.

Prof. SEDGWICK observed, that he concurred with that part of Mr. Williams's paper which referred most of the slate rocks to a partly volcanic origin: volcanic ash will necessarily constitute part of the beds whose formation takes place contemporaneously—so that, in some instances, slates may be the derivatives of volcanic action. In Cumberland he had been led to regard great beds of compact feldspathic porphyries as good finders of slate, although not always of good slate. Granite veins were frequently met with in slate rocks highly metamorphic; it is a common occurrence to find extremely indurated slaty rocks disposed round granitic masses. In the neighbourhood of Dartmoor, these rocks are of various ages, but they are all altered, and assume one general character when in contact with the granite, a change which is superinduced after all have been deposited. The veins enter amongst the altered slates and split them up—the action is purely mechanical. Of their positive injection there can be no doubt; the correspondence between the sides of a vein is exact, marks found on one side agreeing with those on the other. During these operations, the mass is in a state of intense incandescence, and in cooling, joints will be formed affecting both granite and slate: and Prof. Sedgwick attributes the filaments of granite penetrating the slates in the way described in the paper, to voltaic action, sublimating the granite into the minute cracks in the slate; he therefore considers them formed after the granite veins. He wished to confine the word "elvan" to those quartziferous porphyries, more granitoid in their structure than the greenstones, which split up both granite and slate, like those of the Hartz; they were few in Cornwall compared to those of Cumberland, and small compared to those of North Wales. Again, with respect to their mode of injection, if it takes place while the strata are perpendicular, they will split the rocks along the lines of stratification, and appear as if bedded with them, following all their laminations. At Weilberg on the banks of the Larne, the schaalstein, which is a derivative trap-rock, abounds with organic remains. The passage of slaty structure into highly crystalline, was well shown at Llanberris, in the Snowdonian district of North Wales, where talcose slates graduate one way into extremely fine chloritic slates, and the other into compact quartzose porphyry. The cells in some of the slate-rocks mentioned by Mr. Williams, he considered due to the decomposition of iron pyrites rather than hornblende.—Mr. DE LA BECHE stated it to be a common occurrence to find joints of rocks filled with granitoid matter. At St. Michael's Mount, the faults are filled with a variety of substances. The elements of granite, mica, quartz and feldspar, might fill veins in different proportions; at Tintagel, in the north of Cornwall, carbonate of lime occurs with the quartz and feldspar, so that where crystallization has taken place, a granite is formed composed of feldspar, quartz, and carbonate of lime. In confirmation of Mr. Williams's idea of the volcanic origin of slate-rocks, he stated, that the beds referred to at Tavistock and Milton Abbots, had been shown by chemical analysis to possess the same mineral constitution as the adjacent trap rocks.

SECTION D.—ZOOLOGY AND BOTANY.

Dr. HODGKIN read a Report respecting the drawing up, printing and circulation of queries concerning the human race, for the use of travellers and others. These queries were prepared in conformity with a suggestion made to the Zoological Section at the meeting in Birmingham, when a committee was appointed, and a sum of money granted. Dr. H. stated that these queries had been extensively circulated.

Mr. COUCH wished to draw attention to the importance of the study of the grammar of languages, in order to ascertain the relation that one country bore to another. If this were accurately observed, it would be found that not only genera, but species might be discovered in these languages, and the people would, in most instances, be characterized by their language.—Mr. JERDAN mentioned that a work had recently been published, describing the architectural and sculptural remains of a people who had lived in America previous to the existence of the present forests. These works indicated a much higher state of civilization than was found at present amongst the native tribes of America. Relics of vast temples and of altars with hieroglyphics similar to those of the Egyptians, were discovered in the depths of what, at the present day, are vast and uncultivated forests.—Mr. R. TAYLOR made some remarks on the permanence of the forms of language. In Belgium, people in adjoining villages spoke different languages, and without any blending of the two. The languages of Hungary and Finland, though the countries were very distant, bore a strong resemblance to each other, and indicated a relation between the nations, on which history had been silent. It was singular that the least cultivated nations had generally the most complicated languages. Mr. YATES mentioned an instance of the paradigm of a Chippewa verb which he had seen, and which consisted of not less than twelve conjugations.—Dr. RICHARDSON stated that the Esquimaux were comparatively uncivilized, and yet possessed a very complicated language.

'On the Habits of the Eel, and on the Freshwater Fish of Austria,' by Captain Widdington, R.N.—The author stated that his attention was drawn to the subject, by a remark of Mr. Yarrell in his work on British Fishes, in which he ascribes the deficiency of eels in the Danube, to the excessive susceptibility of the eel to cold. The author had seen eels at Wurzburg on the Main, where the average degree of cold is quite as great as that of the Danube. They also exist in the Elbe, above Vienna, which would also be colder than the Danube. They exist undoubtedly in the higher branches of the Danube, but not in the Delta. The reason of this, the author thinks may be ascribed to the nature of many of the waters which fall into the Danube, which being alpine in their character, possess little nutriment fit for the nourishment of the fish. Most alpine streams are composed of melted snow or rain water, and possess few constituents that will afford nutriment to fish, more especially the eel, and thus their absence may be easily accounted for. The same remarks apply to the Rhine, which is completely alpine in its character, till it reaches the Moselle. The author announced that Prof. Hechel was about to publish a work on the fresh water fishes of Austria, which would contain some new genera and a large number of new species.

Mr. COUCH said he had studied very particularly the habits of the eel. Captain Widdington's explanation might be correct. The eel was remarkable for its tenacity of life, and existed almost every where, where other fish are found. The eel does not bury its spawn. He described the process of developement of the eel. Directly the young are born, they ascend the rivers and get into almost every possible position. This takes place in March; after that month, migration ceases. If it could be accomplished, they would all go back to the sea after this period; but circumstances render this frequently impossible. To effect this object, they frequently pass over dry ground, ascend the sides of rocks, and overcome incredible difficulties. This is also the case with the opossum shrimps when ascending a river. The tail of the eel is prehensile; it can get out of boats by its action, for if it once gets it on to the edge of the boat, it is sure to get into the water. This is why fishermen always bruise these fishes on the tail, in preference to any other part, when they catch them. They hear better then many fishes, and this may account for their being disturbed during thunder or any great noise, when other fishes were quiet.—Mr. JERDAN related the instance of the young of the eel being found in a stream near Maidstone in the month of August. With regard to the food of eels, he had seen them feeding on weeds that were floating on the surface of a pond.—A Member stated that in Jamaica the eel was a poisonous fish, and never eaten.—Mr. COUCH thought that their food might, in some instances, render fishes poisonous. He thought eels were double-brooded, producing spawn in winter and summer. This would account for Mr. Jerdan having seen the young so late in the summer. Many fishes were double-brooded, as the shark, trout, &c. A phenomenon called *foul water* in the sea arose from the spawn of fish. It was deposited, then floated to the surface and formed a kind of mucous layer for many miles on the sea. When it began to decompose, it was called foul water.

The subject of the diseases of fish having been alluded to, several instances were related by members, in which particular species of fishes were attacked in ponds and rivers, and died off in great numbers. The causes of these phenomena were not satisfactorily made out.

The following instance of animal exhalation affecting plants, was related by Mr. Ball.

Having obtained a very young porpoise (*Delphinus phocæna*), a few hours after it was killed, I became anxious to get the immature bones of its skull, without the trouble of dissection or the time of maceration. Accordingly, I placed the head in an earthern crock, and put upon it nearly a quart of large maggots (larvæ of *Musca vomitoria*), in order that they might eat away the soft parts. I then placed the crock in a fern house (that is to say, a miniature greenhouse), of about thirty cubic feet in dimensions, with the view of devoting the maggots (when they were transformed into large blue flesh flies, as food for some toads (*Bufo vulgaris*) and natter jacks (*Bufo rubeta*), which were confined in the fern house. I then left them, and on returning six hours afterwards I was astonished at the change which had come on in the verdures of my plants. The flowering fern (*Osmunda regalis*) was turned red brown; the maidenhair (*Adiantum capillus veneris*) was lying quite flaccid; several species of Aspidium, and other ferns, were as if they had been plunged into boiling water, as was also a bramble (*Rubus corylifolius*), while a wood gourd (*Oxalis acetosella*) was turned yellow, and its leaflets dropped on the slightest touch: in fact, no vegetable in the case escaped destruction of its leaves or fronds. The odour exhaled was not that of putridity, but of that peculiar heavy kind so characteristic of the marine mammalia. I do not pretend to speculate on the cause. There did not appear to be any smell of ammonia.

Dr. Lankester thought that the injury done to the plants in this case must arise from some gas formed during the decomposition. Very small quantities of injurious gases affected plants, as the experiments of Drs. Turner and Christison had proved how small quantities of inorganic gases would poison plants exposed to their influence.

'On two remarkable Marine Invertebrata inhabiting the Ægean Sea,' by Mr. E. Forbes.—These animals were taken in the harbour of Nousa, in the island of Paros, which is extremely rich in marine productions. The depth of the bay is generally from seven to ten fathoms; the bottom sand and weed. The animals differ according to bottom and depth. Amongst the sandy heaps at the bottom of this bay are two new animals. The first a zoophyte of the family Actiniadæ, which is free and vermiform, and which lives in a tube of its own construction, a combination of characters hitherto unnoticed among the helianthoid polypes. The second is a tubicolar annelide, which lives in a strong gelatinous tube, bearing a remarkable analogy to the sac of certain entozoa. These two animals are noticed together, as in each case the peculiarity of the organization and habits is the result of a similar adaptation of form, in two very distant tribes, to a similar locality. In the absence of works of reference, the author abstained from giving names to these new animals, although he believed them to be new both generically and specifically.

'On Natural History as a branch of General Education,' by Mr. R. Patterson.—The effects and utility of instruction in Natural History in infant schools, in those for the middle and upper classes, and as a part of a collegiate course, were insisted on; and suggestions thrown out as to the means by which its more general introduction into places of education might be promoted.

'On a New Glirine Animal from Mexico,' by J. E. Gray.—The animal before us, said Mr. Gray, brought from Mexico by Mr. J. Phillips, is peculiar for having large cheek pouches, which open externally on the sides of the cheek. This conformation has only hitherto been observed in four genera of glirine animals, which exclusively inhabit the northern half of the American continent, as the genera Saccophorus, Saccomys, Anthomys, and Heteromys. These cheek pouches are used by the animals to carry their food, as the monkeys of the Old World use their internal pouches, which are found between their cheek and the mouth. The first of these genera has been long known; and it has been believed that these cheek pouches hung out of the side of the cheek like pockets; but this does not appear to be the case with the genus under consideration, or with the Anthomys, which was so called because Mons. F. Cuvier found their cheek pouches filled with flowers. If it were not for these cheek pouches, the animal before us might be taken for a Gerboa, with which it perfectly agrees in the softness and colour of the fur, and in the length of the hind legs and tail, which has a brush at the end, so that it may be at once distinguished from the other American genera above enumerated, which either have an elongated scaly tail, like a rat, or a very short one, like a lemming. I am therefore inclined to consider this animal as the representative of the genus (Dipus) Gerboa, which is confined to the more temperate part of Africa, as the genus Harpalotis is representative of the same genus in Australia. The combination of the forms and colour of the Gerboa, with the external cheek pouches of the pouched rat, at once marks this animal as a new genus, which I propose to call Dipodomys, or Gerboa Rat, designating the species after its discoverer, *Dipodomys Phillipsii*.

Section F.—STATISTICS.

A paper, on the Polytechnic School of Paris, prepared under the direction of J. Heywood, Esq., was read. It gave the history of the several changes in the constitution of the school from its first establishment, in 1794, to its last modification, in 1840, when M. Thiers suppressed the professorship of the English language! Students enter the school between the ages of sixteen and twenty; before their admission they are subjected to a strict examination in arithmetic and the elementary parts of mathematics. The price of their board, &c. is 1,000 francs per annum. They are governed by military discipline, but no provision is made for their moral or religious instruction. The course of study extends only to two years, and is conducted by repeated examinations, or, as they are called, interrogations. The subjects of study and the estimate formed by the rulers of their relative importance is shown in the following table:—

Junior Division.		*Senior Division.*	
Courses.	No. of Lectures.	Courses.	No. of Lectures.
Analysis and Geometry	48	Geometry of Probabilities	41
Statistics and Dynamics	28	Mechanics	35
Descriptive Geometry	66	Machinery	29
Analytic ditto.	14	Geodesy	34
Physics	30	Physics	30
Chemistry	36	Chemistry	36
French Composition	3	Architecture	34
Topographic Drawing	29	German	30
Drawing Figures, &c.	51	Drawing in all its branches	98
Water-colour Drawing	18		

The examination determines the order of the pupils' admission into the public service. They are usually appointed to one or other of the following departments:—artillery, engineers, navy, army, civil engineers and hydrographers; staff and corps of guides; bridges, roads, and mines; gunpowder and salt-petre works; tobacco manufacture. Some years ago the students were zealous politicians, but now politics are strictly prohibited.

Dr. Bowring explained the position which the school occupies with respect to the French government, for the purpose of showing that no similar institution could be established in England. Roads, bridges, and other public works which in our country are superintended by local boards, are under the direct authority of the government.—Lord Ebrington asked, whether any bursaries or scholarships were attached to the school, and under what limitations they were held?—Dr. Bowring replied, that bursaries were attached to most of the public schools in France, but that they were only tenable for the purpose of completing education.—Sir C. Lemon stated, that there were bursaries in the Polytechnic School similar to the travelling fellowships in the English universities.

Mr. H. J. Porter read a paper on the Loan Funds in Ireland.—He stated that the interest excited by his paper on Pawnbroking, read at Glasgow (*Athen.* No. 678), had induced him to procure a statistical account of the operation of loan funds in Ireland, together with the opinions of the directors as to the benefits conferred, the difficulties to be overcome, and the evils, if any, which may arise from their operation. He presented tables of 215 loan funds, three of which were reported to have ceased operation since the accounts were received. It was necessary, before entering on the subject, to allude to a system which was general in Ireland, and which had only been partially checked by the working of the loan funds. It is explained in the following extract from the Report of the Ballycastle Loan Fund:—"It was a common practice to supply meal at a price one-third above the market. Potatoes were also supplied during the cheap season, an engagement being entered into by the buyer to pay the summer price, whatever it might be; nor was this all, for interest was charged on the promissory notes at the rate of 6 per cent. Again, if a poor man required a cow or a horse, he applied to one of the money-lenders, who either purchased it for him, charging him 1*l.* for the bargain, and sometimes more, or counted down the money asked for by way of tender, and then abstracted 1*l.* for the compliment: in either case putting the borrower to the cost of 1*s.* 6*d.* for the promissory note, and requiring him to pay 6 per cent. interest. In like manner, weavers were obliged either to take yarn from the dealers considerably above the market price, or if, as was often done, they borrowed 20*s.* for one month, or between two markets, to purchase yarn for themselves, they were charged 1*s.* at least, and frequently more, for such accommodation." The funds are raised by deposits, and it is gratifying to find that the sum of 44.811*l.* has been deposited by farmers, as the money-lenders just described were persons holding from twenty to fifty acres of land; the greater part of this sum was therefore formerly employed in usurious practices, to which the farmers now prefer the certainty of 5 or 6 per cent., without any trouble or risk. The sum deposited by manufacturers is trifling, being little more than one-seventh of the agricultural amount. It appears that 329 servants have deposited 7,157*l.*; these depositors are not numerous, except in those loan societies where small sums are received at a lesser interest, until they amount to 5*l.*, when a debenture may be purchased, and the interest increased to 6 per cent. Depositors of 50*l.* are the most numerous class; Mr. Porter thinks them desirable only at the commencement of such an institution, and wishes them to be gradually paid off, in order to make room for the depositors of smaller sums. The greatest number of loans have been applied, it is believed, to the most useful purposes. In the year 1840 there were issued—

	Loans.	Amount.
For the purchase of horses, cows, pigs, &c.	37,766	£152,875
For the purchase of seed, manure, implements, &c. and other agricultural purposes	9,247	32,574
Total	47,013	£185,449

For the purchase of provisions the number of loans has been 23,363, amounting to 77,510*l.* Loans for the payment of rent and debts are not generally encouraged; nevertheless, there are many instances of the best effects from both of these objects. For the purpose of dealing in various ways the sum of 53,938*l.* has been issued, in 14,295 loans. This class of borrowers is very numerous.

The following is a return of the persons who, in the opinion of the directors, have been benefited by these institutions:—

32 Loan funds bear testimony to advantages conferred on farmers in their crops and tillage.
52 " " small farmers in the purchase of cattle.
64 " " supply of provision without usurious prices.
57 " " promotion of industrious and economic habits.
49 " " benefits to tradesmen, mechanics and dealers.
98 " " general advantage to the community.

The following number of institutions complain of difficulties:—

5, Difficulties arising from opposition.
17 " " want of funds.
4 " " improvident borrowers.
81 state that little or no difficulty has been experienced.
10 complain of loss of time to borrowers and loss of money to sureties.
1 speaks of intemperance and fraud.
9 mention the necessity of pawning to pay instalments.
91 state that there were little or no evils apparent.

The agricultural Loan Funds at Tyrrell's Pass and Moate are the most extensive, and a knowledge of their judicious management may lead others to follow their example. The first extends its operations over four hundred square miles; it has employed a Scotch agriculturist, and furnishes seeds to farmers. It also supports from its profits an infant school, in which 120 children are educated; a platting school for Irish Leghorn hats and bonnets has been commenced, and the manufacture of those articles from grass and rye-straw is of acknowledged beauty. A Ladies' Society is connected with the Loan Fund, which distributed at Christmas last 202*l.* worth of clothing, and 177 stones of wool were lent on three

months' credit, and above 40*l.* given in premiums. The Report of the agriculturists is most satisfactory. A meal-store was opened at the most trying season of the year, and employment afforded to 5,229, who, with their families, constituted an aggregate of 19,795 souls, all deriving benefit from the employment afforded to one or more members of their families. The Moate Loan Fund has allocated 50*l.* per annum to an agricultural school. It is the only one in Leinster, and if properly supported by the landed proprietors, will doubtless prove a great benefit to the farming population. The sum of 80*l.* has been given as premiums to the farmers in those parishes from which the Loan Fund derives its profits. Forty pounds were also given to the Ladies' Charitable Association, which keeps forty poor women and girls in constant employment. On the branch of the system which embraces Monts de Piété, Mr. Porter referred to his paper read at Glasgow. He however stated that they are increasing in number, and are doing much to mitigate the evils of pawnbroking. At Limerick, Tanderagee, Portadown, Belfast, Newcastle, and Dungannon, Monts de Piété are in active operation, and Coleraine and several other towns are in correspondence on the subject, with the view of opening such institutions. Mr. Porter then presented the following tables, explaining that the total number of Loan Funds was 215, of which three were closed, 73 had not yet made returns, and 66 kept no account of the subjects recorded in the second table.

Table of the Loan Funds in Ireland, from which returns have been received, showing the amount of Loans in the four Provinces.

Provinces.	Capital in Circulation.	Total Amount Circulated.	Total number of Loans in 1840.	Sums in Borrowers' hands, 31st Dec. 1840.	Gross Profits.	Expense of Management.	Net Profits.	Profits spent in Charity.
Ulster	£93,515	£523,415	130,560	£124,631	£18,577	£6,089	£6,367	£2,821
Leinster	56,898	382,276	110,091	96,523	15,602	4,840	6,616	4,288
Munster	44,097	183,619	191,510	46,989	7,241	2,998	2,385	292
Connaught	5,029	76,364	240,010	19,178	2,564	1,124	478	147
Total	£195,339	£1,165,574	464,171	£287,321	£44,004	£15,051	£15,846	£7,548

Purposes for which Loans are granted by seventy-three Loan Funds, being about one-third of the number in existence.

| Provinces. | Loans for Horses, Cows, and Pigs. | | Loans for Seeds, Manure, and Implements. | | Loans for Meal, Potatoes, &c. | | Loans for Wool, Flax, and Yarn. | | Loans for Looms. | | Loans for Iron, Coal, Timber, &c. | | Loans for Rent. | | Loans for Debts. | | Loans for Dealing. | | Loans for Miscellaneous Purposes. | | Loans for Emigration. | | Loans for Building. | | Loans for Education. | | Loans for Charitable Purposes. | | Loans for Religious Purposes. | | Loans for Drainage. | | Loans for Reclaiming Waste Land. | | Loans for Fishing. | | Loans for Trade. | | Loans for Manufactures. | | Loans for Mining. | | Loans for Quarrying. | | Loans for Navigation. | | Loans for Roads. | | Loans for Bridges. | | Loans for Ferries. | | Loans for Piers. | | Loans for Harbours. | | Loans for Canals. | | Loans for Docks. | | Loans for Gas Works. | | Loans for Water Works. | | Loans for Steam Vessels. | | Loans for Sea Vessels. | | Loans for Boats. | | Loans for Steam Engines. | | Loans for Machinery

but he would refer to his experiments, published some years ago in the Philosophical Transactions, in which he measured the friction of the water against a body revolving in it, by the time which a given weight took to descend; this body consisted of rings, and he found that the friction or resistance through the water did not increase in proportion to the number of rings.

'On a Floating Breakwater,' by Capt. Taylor, R.N.

The breakwaters hitherto constructed have generally consisted of solid masonry, thus presenting an unyielding obstacle to the waves, and permitting accumulations of mud and sand behind them, and not affording the security to shipping and life which is required, and may be afforded by other means. The floating breakwater consists of floating sections framed of timber, moored to piles; these sections yield to the shocks of the sea, and admit the wave to pass under, over, and through them, and by thus dividing the waves, reduce them to an open and harmless state. The forms of these sections vary according to the situations in which they are employed. The sea in the most tempestuous weather is said to be tranquil at the depth of sixteen or eighteen feet below the surface; a breakwater, therefore, immerged to that depth, and presenting six or eight feet above the surface, is sufficient to form a safe harbour on the most boisterous coast. The angle of inclination which the section presents to the wave is that pointed out by nature in the Mew-stone, viz. 35 degrees. Stone breakwaters check the ground tides, and cause accumulations of mud and deposits which otherwise would go seaward, and are peculiarly subject to the action of the teredo, constantly at work below the dove-tailed stone; and cavities being formed, large portions are occasionally blown up. The destruction by the teredo may be obviated or arrested in the floating breakwater by tarring the wood with a preservative mixture, or by restoring from time to time such portions as are injured. The distinction between waves and breakers is very important, the former being an undulation, the latter being accompanied with a translation of the mass, and capable therefore of exerting extraordinary forces on the masses opposed to them.

Some remarks were made on statements in another Section, respecting the destruction to which the limestone of which the Plymouth Breakwater is exposed from certain animals (*Saxicava rugosa*). These animals do not, however, meddle with granite, and probably timber payed over with hot tar would resist their ravages, as animals of this nature seem peculiarly averse to the smell of tar and similar substances.

Mr. Scott Russell reported the progress made by "the Committee on Forms of Vessels" during the past year. The object of the experiments is twofold—to advance our knowledge of the laws of resistance of fluids,—and to obtain data for the practical improvement of the art of naval construction. Many and expensive are the experiments formerly made on this subject. Unfortunately, these experiments had been made with imperfect apparatus, or under circumstances different from the conditions of bodies moving on the surface of the water, or on solids of a form unsuitable to the formation of ships, or on so small a scale as to render them unworthy of the confidence of the practical constructor. In the present series of experiments a more simple apparatus was employed than in any former series of experiments. The forms of body experimented upon were those of actual ships, or bodies analogous to those in use: it was the object of the experiments to supply the actual desiderata of hydrodynamics and of practical ship-building. The experiments were made on vessels of every size, from models of 30 inches in length to vessels of 1,300 tons. The experiments were also made upon vessels in water of variable depth and in channels of various dimensions, so as, if possible, to embrace all the elements of the resistance. A minute description of some of the apparatus was then given, along with some general illustrations; but as the experiments were still in progress, and to be continued during the following year, no general statement of results was entered into at the present meeting. It was expected that by the next meeting the whole would be concluded.

'On an Improved Sight for Rifles and other Fire-arms,' by C. Thornton Coathupe.—The usual mode of constructing the regulating sight of a rifle is, to adapt a piece of steel to a dove-tailed groove, filed transversely across the lower end of the barrel, and to furnish this with moveable leaves of various heights, which are adjusted for certain definite ranges, as 100, 150, 200, 250 yards, but between these stated intervals an imaginary estimate for the correct elevation must be made. The following sight is equally simple in construction, and any elevation may be obtained with accuracy. A piece of iron plate, square at the edges, of from six to eight inches in length, and from $\frac{3}{8}$ to $\frac{1}{4}$ an inch in width, about $\frac{3}{8}$ at its thicker, and $\frac{1}{16}$ of an inch at its thinner end, is fixed to the barrel by screws. Upon this inclined plane is fitted a piece of steel of similar length and width, and of uniform thickness throughout, with a sight in its upper edge, moveable in a dovetailed section of the preceding piece, so as to traverse the inclined plane from end to end. If the upper edge of this traversing sight, when at the commencement of the inclined plane, be so adjusted to the heights of the inclined plane and of the muzzle, that a line passing through a central point in each shall be parallel to the axis of the bore, this will be the position for the point blank range of the rifle; and as the lower sight is pushed gradually along the inclined plane, the angle of elevation, and consequently the range, will be proportionally and gradually increased until it has traversed the extent of its limit, and the lower plate being graduated for every ten yards of the range of the barrel beyond its point blank range, the sight may be instantly adjusted by means of the thumb, to accord with the estimated distance of the object from the observer.

SATURDAY.

Several excursions having been projected for this day to the places and objects of interest around Plymouth (as noticed in our last), it was resolved not to enter on business of any general interest.

The Secretary then read Mr. Baily's Reports 'On the Appropriation of the Funds voted for the Reduction of the Stars in the Histoire Céleste,' which will be "finished before the next meeting of the Association," and 'On the Extension of the Stars in the Astronomical Society's Catalogue,' which "it is expected will be completed in a short time." Colonel Sabine read the Report of the Committee appointed to superintend the translation and publication of foreign memoirs.

'On the Translation of Foreign Scientific Memoirs.'—The Committee have received, in the current year, translations of the following memoirs, presented to the Committee for the purpose of insertion in Mr. Taylor's collection of foreign scientific memoirs, viz., from Prof. Thomas Graham, Redtenbacher, 'On the Composition of the Stearic Acid'—Provostaye, 'On the Action of Sulphurous Acid on Hyponitric Acid, and on the Theory of the Formation of Sulphuric Acid.'—From Sir William Jardine, Bart., Bischoff, 'On the Anatomy of the Lepidosiren.'—Müller 'On the Anatomy of Myxine,' &c.—From Lieut.-Col. Sabine, Gauss 'On a Method of Facilitating the Observations of Deflection'—Gauss 'On the Laws of the Mutual Action of Bodies whose elements attract or repel in the inverse ratio of the square of the distance.' These memoirs have been given to Mr. Richard Taylor. The only expenditure which has been made from the grant placed at the disposal of the Committee for the current year, has been 11*l.* 2*s.*, for a plate of the Transportable Magnetometer, lithographed at Göttingen under the direction of M. Weber, the inventor of the instrument, and admitted duty free by permission of the Lords Commissioners of the Treasury.

Signed on the part of the Committee,
Edward Sabine.

The Secretary read a short notice of a meteorological journal for the year 1840, kept by Mr. J. Lees at Nassau, New Providence, lat. 25° N., lon. 77° W.

We have received a very long letter from Dr. Butter, of Plymouth, in reply to our very brief comment on the *no*-proceedings in the Medical Section on Thursday and Friday. The greater part is wholly irrelevant: but we will, in courtesy, print so much as relates directly to the subject, though we are hard pressed for room, and cannot comprehend how his argument tends to destroy the inferences which we feared the facts might suggest:—

In glancing this morning at the *Athenæum* of the 7th inst., the first passage that met my eye, under the head "British Association," was the following, viz. "Section E. Medical Science.—This Section has hitherto derived its principal interest, and more important papers, from the zeal and scientific acquirements of the local members. What then will be inferred as to the state of Medical Science in the West of England, when we record that the Section met on Thursday and Friday, and were compelled to adjourn, not a single paper having been presented to the Secretaries?"

Now, Sir, as one of the three Secretaries I beg to reply to your question, and to state, that Medical Science in the West of England is not at that low ebb which you might lead the public to imagine, and that the meetings of Section E. would not have been adjourned for want of papers had proper instructions been transmitted to the local authorities in due time. In justification of the profession to which I belong, and of the town in which I practice, I beg to inform you that neither my colleague, Mr. Fage, nor myself, had been apprised decidedly, until Wednesday, that we were to take office at Section E. (Medical) on Thursday; and that when I inquired into the duties which usually devolved on the secretaries at former meetings, I was informed that they had only to arrange the papers sent in, of which many remained on hand. I particularly inquired if, by taking office, I was expected to contribute any paper, and was distinctly informed in the negative. We met accordingly on Thursday morning, the 29th ult.; * * but as there were few, if any, papers of interest, it is true, as you have stated, that we adjourned to Friday with little or no better result. Dr. Sargent, another secretary, then proposed an adjournment to Monday; and then I learnt, for the first time, that some contributions had been expected from the resident practitioners of Plymouth, not one of whom, according to my belief, had ever attended before a meeting of the British Association. How then could any communications from them have been expected?

Now, be it observed, that this was *the eleventh meeting* of the Association, and as nearly every man in the three kingdoms, of any eminence in science, and many from all parts of Europe and from America, have been present at one or more of these meetings, we fear the public will not think that the truth, according to Dr. Butter's "belief," at all strengthens his case. The West of England has contributed its share, and more than its share, of valuable papers on general science to the Transactions of the Association: yet when in honourable acknowledgment of this zeal and these acquirements, the Association held its meeting at Plymouth, not a single contribution was offered to the Medical Section, and it was twice obliged to adjourn. The apology offered is, that the local officers were not previously properly instructed as to what was expected, and that not a single resident professional man had ever before attended the meeting of the Association. This is just such an explanation as we might have expected, and which would have been allowed to pass without comment, had the Association met at the Sandwich Islands or Tombuctu. However, it is hardly fair to hold others bound by the argument of an injudicious advocate,—indeed, we will hope and believe that Dr. Butter has written without due consideration; and we strongly recommend him to reverse the old proverb and then act on it—let bad alone.

MISCELLANEA

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